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THE 1922 BUILDING OUTLOOK

FROM time immemorial, the leaders in trade, commerce, finance and industry have devoted their energies and money without measure to attempts at foretelling future conditions in their various fields and deducing the probable consequences. Their actions constitute conscious or unconscious recognition of the truth of the proverb "He who does not look before him, must take misfortunes for his earnings." The Chinese even went further than to warn of disaster in the event of failure to look ahead. They pointed out alluring possibilities of wealth that might attend the possessor of prophetic vision. Their saying has it "He who could see only three days into futurity, might enrich himself forever." In any event, the importance of being forewarned of impending situations needs no defensive argument, and with the purpose of ascertaining the actual conditions obtaining in the construction field, THE AMERICAN ARCHITECT has recently conducted an investigation among architects, manufacturers of building materials and equipment, and money loaning institutions.

In order to secure as accurate an estimate as possible of the amount of work on the boards in architects' offices and the opinions of architects concerning pertinent questions in this connection, the following questionnaire was sent to every sixth architect or architectural office on THE AMERICAN ARCHITECT'S subscription list without reference to location, prominence or any other consideration:

1. Do you believe the present cost of building will be materially reduced in your locality during 1922?
2. What is the approximate amount in dollars of the work which you have on your boards or in prospect?
3. What are the chief obstacles to this work going ahead promptly,—lack of money,—labor conditions,—or belief on part of owners that costs are coming down in the near future?
4. Is there any scarcity of labor in your locality?
5. Is there any scarcity of materials in your locality?
6. What is the attitude of loaning institutions towards building loans?

Section from which replies were received	QUERY No. 1 Replies received in percentages			QUERY No. 2	QUERY No. 3 Percentage ascribing difficulties in some degree to following causes			QUERY No. 4 Percentage of replies		QUERY No. 5 Percentage of replies	
	Yes	No	Non-committal	Average work per office replying	Lack of money	Labor Conditions	Owners believe prices will drop	Yes	No	Yes	No
New England States	26.2	62.8	11.0	970,000.	52.2	45.4	84.0	4.5	93.1	0.66	98.
North Atlantic States ...	9.8	81.7	8.5	958,000.	60.5	53.5	80.2	11.2	84.5	0.66	98.
South Eastern States ...	20.0	80.0	0.	963,000.	70.0	10.0	30.0	0.	100.	0.	100.
South Western States ...	0.	100.	0.	405,000.	50.0	50.0	72.7	4.7	95.2	0.33	99.0
Middle States	16.6	76.4	7.0	1,796,000.	61.6	42.4	77.7	2.1	97.8	1.0	98.5
Western States	10.2	89.8	0.	705,000.	46.1	33.3	69.2	25.6	74.3	2.0	97.5
Total Average	15.0	79.0	6.0	1,170,000.	57.1	43.8	76.1	6.0	92.5	3.0	96.0

Between 700 and 800 inquiries were sent out and approximately 300 replies were received. These have been tabulated, with the results as shown on the above table.

More than a casual glance at this table is necessary to comprehend fully the significance of the story which it tells. For example, sentiment in

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New England regarding question No. 1 differs widely from that in the Southwestern states, where the opinion of those architects replying to the questionnaire was unanimous that there would be no material reduction in the cost of building during 1922. Probably the average of the entire country gives as accurate information on this question as can be had at this time. With 79 per cent. of the architects believing there will be no material reduction in the cost of building, there is little encouragement for a client who favors postponing his building operation for another year.

The answers to query No. 2 are surprising to those people who have maintained that there was little or no activity in architects' offices. From the table it appears that work in the Southwestern states is starting more slowly than in any other section and that the middle states are leading. The average per office of $1,170,000.00 worth of work, if maintained throughout the country, would give approximately $6,000,000,000.00 worth of work now on architects' boards. Undoubtedly some of this work will not go ahead during 1922, but on the other hand, there are millions, perhaps billions, of dollars' worth of work, not now contemplated, which will develop during the next year.

The answers to query No. 3 seem to indicate that the greatest obstacle to work going ahead promptly is the belief on the part of owners that prices will drop in the near future. There is only one section of the country where this is not true and that is the Southwestern states, where the greatest difficulty seems to be a lack of money. In general, labor conditions do not seem to offer the barrier that they did a year ago, and yet the letters received seem to indicate that in some of the principal cities reductions in wages must be effected before labor conditions will be conducive to the carrying out of the large building programs contemplated.

The replies to question No. 4 seem definitely to establish the fact that there is no labor shortage at the present time.

The same can be said in regard to question No. 5. Building materials and equipment are now available in any quantities demanded.

The answers to question No. 6 are so varied that it was not feasible to tabulate them. They range all the way from the statement that "There ain't no such animal as a building loan" to the architect who reports the loaning institutions very liberal and no difficulty whatever in securing money for any legitimate project. However, in something like 80 per cent. of the letters received dissatisfaction with the conditions in the loaning market was expressed.

To sum up the impressions gained from a careful perusal of the replies to this questionnaire, it would seem that, from the architects' viewpoint, scarcity of money and difficulties in securing it, taken together with the widespread impression on the part of owners that building costs are probably going to drop in the near future, constitute the principal obstacles to the resumption of building on an unprecedented scale.

In order to ascertain whether there was any basis for the owners' belief in the reduction of costs, a questionnaire asking the following information was sent to approximately 600 principal manufacturers of building materials and equipment. Replies were received from 45 per cent. of those addressed, with the following results:

1. Do you believe the cost of your product will be materially reduced during 1922?

Less than 10 per cent. replied in the affirmative.

2. Is there a prospect of labor cost coming down in the near future?

Fourteen per cent. replied in the affirmative; 80 per cent. in the negative and 6 per cent. were non-committal.

3. Have you capacity for greater output? In other words, are you running at full capacity now?

Twelve per cent. of those replying are now running at capacity, the balance all the way down to 25 per cent. The average is probably around 50 per cent.

4. Have you any trouble in securing shipping facilities?

The answer to this question is one that is particularly gratifying, in view of the difficulties experienced a few years ago. Only two manufacturers reported any difficulty, a percentage of less than 1 per cent.

5. Are there any obstacles to your making prompt shipment of any order received?

Only 4 per cent. of those replying answered in the affirmative, which seems to indicate a particularly favorable condition for increased building activity.

Our investigation of the conditions among loaning institutions was the most unsatisfactory and inconclusive of any which we have undertaken. Less than 25 per cent. of the institutions addressed made reply to the following letter:

Dear Sirs:

In canvassing the situation in the building field in an effort to determine just why needed building is not going forward more rapidly, we have been informed many times that there are two main obstacles in the way of a building boom.

First —The belief on the part of owners that building costs are coming down.

Second—The difficulty in securing building loans, and permanent mortgages.

In our issue of January 4th, we propose to discuss these questions, and are at present conduct-

ing an investigation to determine the true state of affairs concerning these two points.

If you are in sympathy with our efforts to present the facts, will you please write us, stating the attitude of your institution towards loaning money on buildings?

Are you prepared to make such loans?

If so, what percentage of present cost do you consider a full loan?

Is there plenty of money to loan on buildings in which the owner has invested a fair equity?

Thanking you for your co-operation, we are

Very truly yours,

Sixty per cent. of those replying evaded the questions or stated that their investment policy at the present time did not include building loans. The most frank statement received was one to the effect that so far as funds were available, loans were being made, not in excess of 50 per cent. of the institution's own valuation. The opinion was expressed by some that while money is not yet plentiful for this purpose, there were indications that it would be so within the next three or four months.

In considering the entire subject of building now it would seem that an architect might safely advise a client as follows:

First, that if he is not in position to finance his operation and must look for a loan from the generally recognized loaning institutions, the first move is to make sure of the money to carry on the project before any further expenses are incurred.

Second, if the financing can be taken care of or satisfactorily arranged, all other factors appear favorable. In fact to sum up the situation the concensus of opinion in the profession and among manufacturers of building materials and equipment is that there will be no material reduction in prices during 1922. There is no scarcity of labor. There is no scarcity of materials. Shipping facilities are ample. Further than that, the immense amount of work in prospect will in all probability change these conditions within the next few months. So it would seem to be the part of wisdom to go forward with work that can be financed as soon as possible. Indeed it is doubtful if building can be undertaken six months from now under anything like as favorable conditions as at the present time.

THE BUILDING OUTLOOK IN THE MIDDLE WEST

By F. E. DAVIDSON, A. I. A.

ANY prediction of the building situation for the year of 1922 must obviously be based on conditions as they now exist and on conditions that may reasonably be expected to develop as the effect of economic laws which cannot be amended or repealed.

The first and most important factor is and will unquestionably be the volume of money and credits available for new construction. Funds for buildings will undoubtedly become available in direct proportion as the money now tied up in frozen credits is released and interest rates for building loans will be reduced in direct proportion as the Federal Reserve Bank lowers its rediscount rate.

The second factor to be considered is that of materials. The average level of the cost of building materials will probably only be lowered in proportion as the purchasing power of the dollar increases (subject to local fluctuations and the varying demand). It is obvious that the government will find it impossible to secure any material reduction in freight rates, and until freight rates are decreased it is probable that material costs will remain at approximately their present level.

The third important factor is that of labor. The building industry of America must realize that during the war a very large percentage of the skilled workers left the industry and are now employed elsewhere. It must also realize that there has been no appreciable accession to the ranks of skilled building mechanics by immigration; that the stagnation—so termed—in the industry for some years has to a very large extent disorganized and made inoperative the apprentice system in vogue in the large industrial centers, and that the officers of the labor unions in an effort to provide jobs for their members, have erected a barrier against those mechanics who would affiliate with them. Should anything like a building boom develop there are not enough building mechanics to do the work. Skilled building mechanics cannot be made over night and if, as some have predicted, the spring of 1922 will see a general revival of the building industry, the probabilities are that the competition for men and material will so act as to force the cost of

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construction to such levels that will in a short time effectively stop construction. Owners will not construct buildings if the cost is forced to such levels that they cannot secure a proper return on their investments.

It is probable that during 1922 there will be experienced much difficulty with organized labor. In many centers the building trades are thoroughly organized and will oppose to the utmost limit of the power of their organizations a reduction of wages in proportion to the increase of the purchasing power of the dollar.

Another important factor which has prevented any general resumption of building is that the building industry of the nation is in disrepute. The investigation by the Lockwood Commission in New York, the Dailey Commission in Chicago, the records of the investigations conducted by the Department of Justice, the hundreds of indictments returned by the Federal and State Grand Juries against labor officials, contractors and material firms, the story of the Arbitration Proceedings in San Francisco, Chicago, and other centers, the repudiation of written agreements and solemn pledges by both contractors' associations and trade unions, the almost universal disregard of the obligations of citizenship by owners who have insisted that their work shall be completed at any cost, even involving the payment of graft, the attitude of bankers and loan brokers, all have demonstrated the fact that the whole industry is permeated with rottenness in all its various branches. Apparently fair dealing cannot be expected and the time has arrived when a new start must be made in an effort to rehabilitate the industry, since the public apparently has no confidence in the fair dealing of either the trade unions, contractors' associations, material combines, or of any other factor of the building industry. Is it not possible that the coming year will witness a spiritual revival in the industry when its driving forces will be directed to a general house cleaning, realizing that no half-way measures can or will accomplish the desired result?

Is it not also possible that the public, realizing the utter futility of relying upon contractors' associations and trade unions to perfect agreements affecting the building industry and for which the industry must pay, will demand a general development and an adoption of the plan adopted by San Francisco to handle the labor problem? Is it not reasonable to assume that in direct ratio as the building industry in the various localities is rehabilitated in the confidence of the building public, will a general revival occur, limited only by the factors of available money, available materials and available labor?

A MODERN CATHEDRAL FOR AN INDUSTRIAL CITY

BY ALFRED GRANGER, *Architect*

With a Foreword by the Right Reverend William Lawrence, Bishop of the Diocese of Massachusetts

Foreword

MY DEAR MR. GRANGER:—

I HAVE read your thesis and looked at the illustrations with much interest. I do not feel able to criticize the plans either in detail or in general, but am glad to jot down this memorandum.

In the first place, I think it is time that the Church of the twentieth century should give careful consideration to such changes of architecture and construction as will adapt the Christian Church both in the conditions of its worship and its work to the conditions of the present, and so far as we know the coming century. There is much in what you say in the preliminary part of your paper, and there is to my mind a distinct lack of original thought in matters of architecture and construction in the Church in this country.

Again, while a great Gothic cathedral may be in place in very few cities, I have my doubts as to whether it is in place in many of the cities in this country. While of course it is most appropriate for a few great services throughout the year, there is an enormous waste in connection with all the other services. Or to put it in another form, I am much afraid that our Church is being led into a great cost for bricks and mortar and beauty of architecture, all very well, which in time will mean a very heavy fixed charge on the Church for a comparatively inadequate return.

Again, in any cathedral construction the conditions of the American parishes must be considered. At present the strength of a diocese is in the parishes; and if a cathedral draws into the vortex of its influence and uplifting worship much of the spiritual constituency of the parishes, the diocese will grow weaker. Our aim in Boston at present has been to emphasize for down town Cathedral the week-day worship and the fact that it is a centre for the transients, the people living in boarding houses; and to discourage the regular family constituency which should go to make up the strength of the parish churches. And in connection with that should be, as you well suggest, the diocesan working centre. Unfortunately in Boston we have not the space where our Cathedral now is.

Whether such a plan as you suggest, wherein the working part of the institutional and working features of the Diocese have such a strong emphasis as compared with the cathedral itself would meet the sentiment of the American people I am not sure; but your studies are, it seems to me, in the right direction in bringing before the Church people of the country a fresh suggestion in regard to the architecture and construction of an American Cathedral.

I am with you, too, in feeling that where it is possible a cathedral should be in the very midst of the population. Think of St. Paul's Cathedral, London, if it were placed today in Belgravia or Knightsbridge.

It is pleasant to hear from a former Tech. student. I remain, with kind regards,

Yours sincerely.

WM. LAWRENCE,
Bishop, Diocese of Massachusetts.

November, 1921.

WHEN the great Gothic Cathedrals were built in the Middle Ages, they accurately expressed the life of their day. Aside from their architectural beauty, the quality which has made them the extreme expression of Art and has made them invaluable to succeeding ages is this quality of Truth, which is a fundamental quality of all living Architecture.

The ancient cathedrals tell the truth and enable us, for our day, to learn the manner of life of the days in which they were built.

In almost every case they are located in centre of the local population and around them grew up the religious and civic life of the community.

We are living in an age of intensive industry and commerce. This has been especially true of the United States since our Civil War, and each year the life of the community has gotten farther away from the churches which have been moved farther and ever farther from the business centres. When old Trinity Church, New York, was built its slender spire, with its Gothic foliation, dominated lower Manhattan Island; now it is completely lost among the towering structures of commerce which surround it.

W. L. George, in his recent book "Hail Columbia," praises enthusiastically American commercial architecture but speaks very slightingly of

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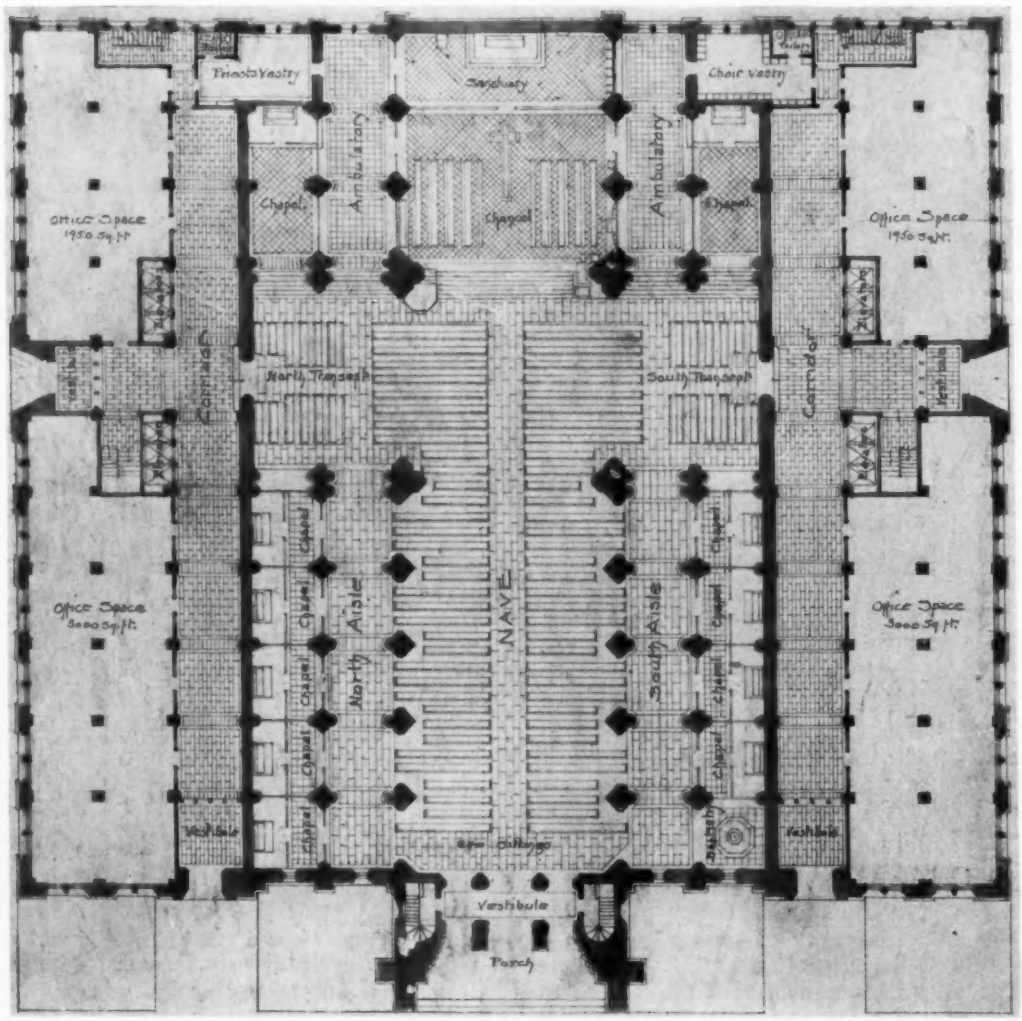
our Gothic churches, beautiful as they may be in themselves, because they are wholly out of touch with the life of our day which the Church should dominate, not only in its influence upon our lives, but also in its outward architectural expression.

Man, as has been frequently said, is incurably religious, and the minds of men, especially of the younger generation, are eagerly seeking for some form of spiritual expression which will satisfy their souls.

Many people say that in the new world which is now being born out of the World War there is no place for the organized church; that it has outlived its usefulness and no longer is in touch with modern life.

In the meantime, thoughtful men and women, within the church and without, are striving to find a solution for the problem which faces the religious world today. They know that the Church is needed, needed perhaps more than ever before in human history, and they also know that the Church cannot fulfill her function in life by standing aside and allowing outside philanthropic organizations to usurp her place, as they are now doing in all our large cities.



Plan of Cathedral Floor

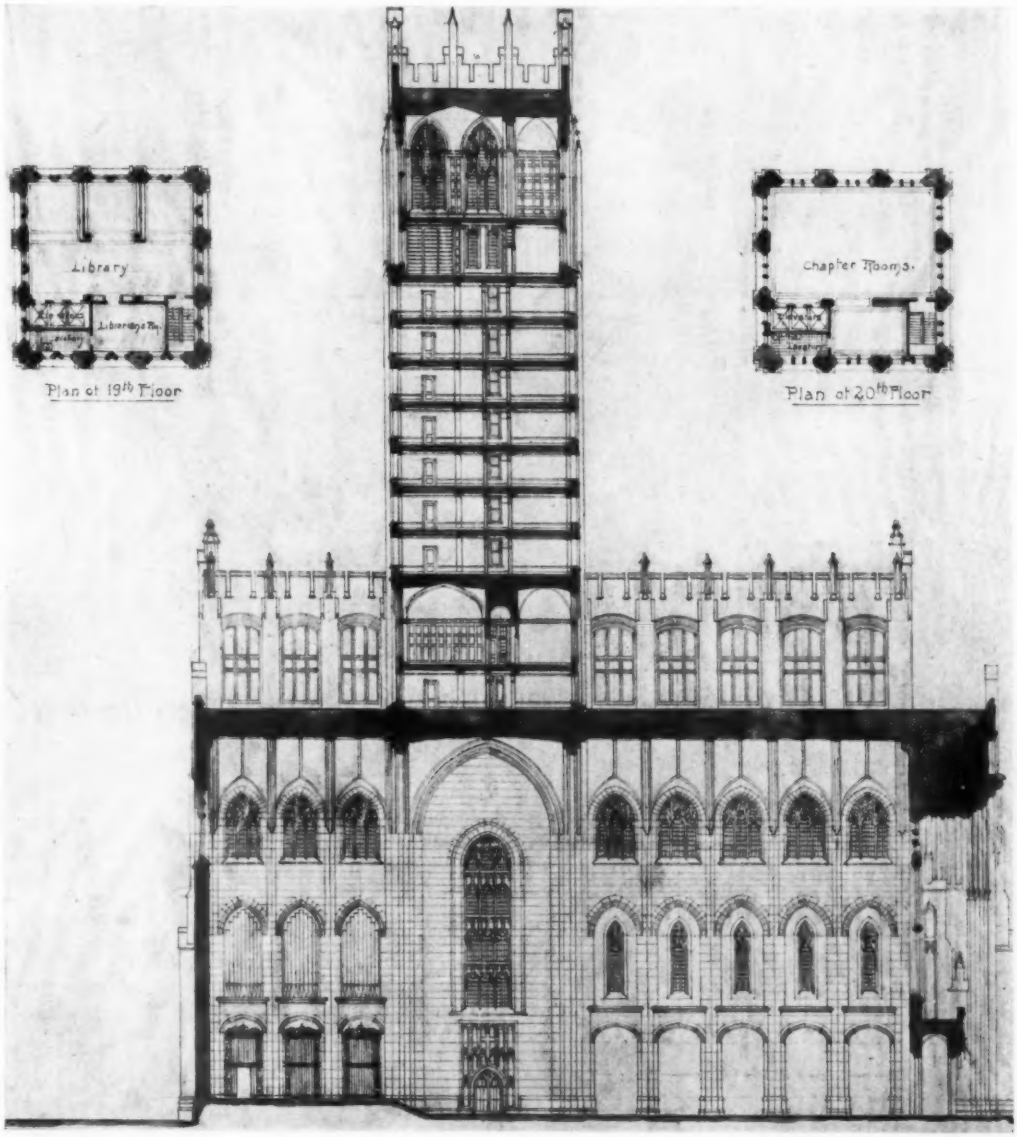
Christ's Church is not exclusive; and those churches which are moved from place to place to suit the convenience of the favored classes upon whom they, mistakenly I think, believe they depend for support are not Christ's Church but rather exclusive religious clubs. The populace regards them with indifference, if not open derision—they do not count.

The Diocese is the unit of organization in the

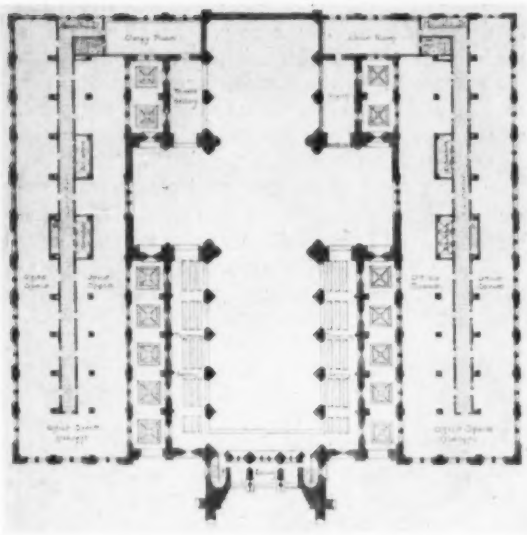
Episcopal Church and the Cathedral is the Diocesan Church. As such, it should be located near the heart of the Diocesan city; it should be surrounded with all those organizations necessary for it to function in modern life; and it should be open to those who seek solace for their souls, day and night. Today the necessary organizations for a metropolitan cathedral are large and numerous and demand, for their operation, a very large amount of floor space.

In order to secure space for all of these activities, the New York City Diocese located her cathedral on Morningside Heights, miles from the centre of the life of the city. The location is superb from the architectural standpoint but, when completed, at the cost of many millions, can it ever be a cathedral in the true sense of the word, the House of GOD for All People? I very much fear not.

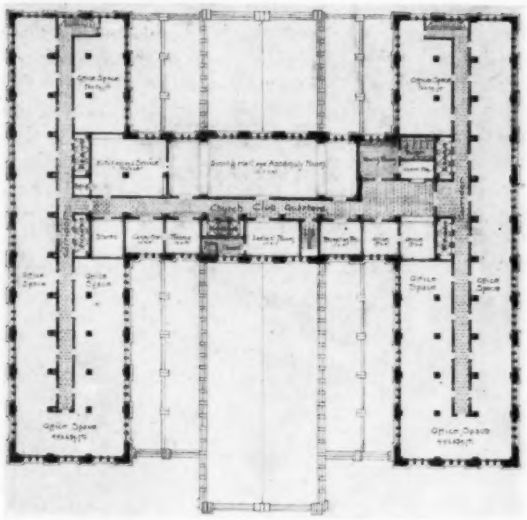
For the mass of people whom Christ commanded His disciples to reach, the cost of transportation to and from the New York Cathedral and the time necessarily consumed in transportation, make it practically inaccessible.



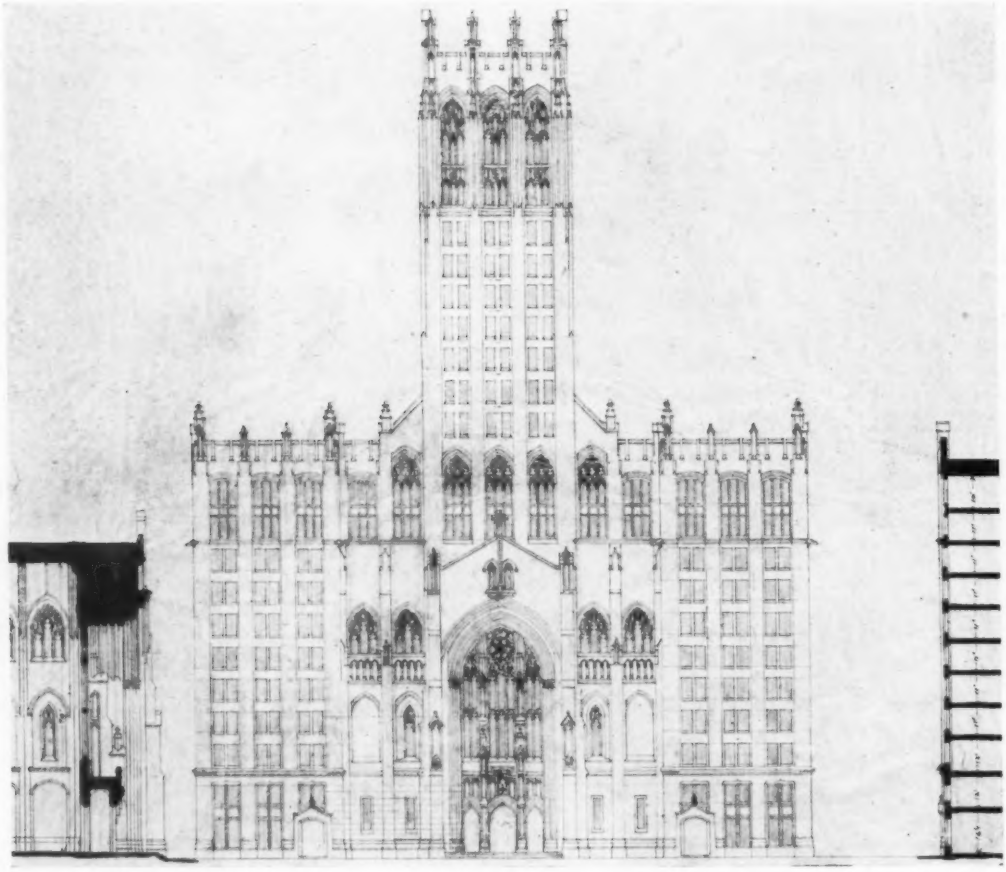
Longitudinal Section



Third Office Floor



Eleventh Floor



West Elevation

A MODERN CATHEDRAL FOR AN INDUSTRIAL CITY

ALFRED GRANGER, ARCHITECT

A MODERN CATHEDRAL FOR AN INDUSTRIAL CITY

ALFRED GRANGER, ARCHITECT

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Next to New York, Chicago is the greatest commercial and industrial centre in the United States and her population is steadily increasing. Today she has no cathedral church, the old Cathedral of St. Peter and St. Paul having been destroyed by fire early in the year 1921. In Chicago land values, within walking distance of the "Loop" where the great hotels and office buildings are located, are prohibitively high and yet—if the Cathedral is to function; is to be the centre of the life of Christ's Church in this great industrial community—it must be located where the masses of the people from the down-town hotels, the apartments and the tenements can walk to it.

It must have, in immediate proximity to it, space to house the Executive Offices of the Diocese; the Church Club; the Woman's Auxiliary; the Visiting Nurses' Headquarters; a small Emergency Hospital; a staff for Rescue and Welfare Work; an Assembly Room for open meetings of social and civic character; an Employment Bureau and all those other agencies which are necessary if the Church is to function in our modern life as Our LORD intended it to function.

In the accompanying photographs of what I have called a "suggestion" for a Cathedral Building, I have tried to meet these fundamental demands in a modern manner which, if it should be adopted, would not only express its purpose in architectural terms but also be typical of Chicago, the most modern and, we believe the most expressive of Twentieth Century America, among our cities.

The building is designed to fit any one of several blocks on the east side of North Michigan Avenue south of the Drake Hotel, a district equally accessible to all sections of the city.

The dominant architectural note in the composition is, of course, the great cathedral church, thoroughly Gothic in plan and character and thoroughly in harmony with our Anglican traditions. The nave is 92 feet high to the crown of the vault and is lighted by clerestory windows, which are 40 feet away from the office-building walls. Additional light is brought into the galleries from lancet windows 20 feet distant from the office walls, while the memorial chapels and baptistry along the north and south aisles are lighted by skylights. High above the reredos at the east end of the chancel are traceried windows similar to those in St. Thomas's Church, New York. The whole scheme of fenestration is shown on a preceding page, giving a longitudinal section through nave and chancel.

A tower, 50 feet square, arises above the crossing to the full height allowed by the Chicago building ordinances. In the top story of the tower is located the Cathedral Chapter House, while one or more floors immediately below the chapter-house, as may be needed, are devoted to a church library.

The Church Club is shown on the plan of the eleventh floor, above the cathedral. This plan and that of the gallery floor, show the amount of floor space which can be subdivided as desired to house the many activities mentioned above.

It will be at once said that such a scheme is radical and does not express the Apostolic character of the Episcopal Church. I believe that that is just what it does express, in the language of our day, for an industrial and commercial community.

Washington is building a beautiful cathedral overlooking the entire city, a cathedral costing many millions more than the building suggested in this thesis; but Washington is not and never will be a commercial city, and this scheme would be as out-of-place, as untrue, in Washington as would their plan in Chicago.

A building such as here suggested, built entirely of dressed Bedford limestone, the Cathedral proper being of stone within and without, should cost, at current prices, approximately ($6,000,000.00) six million dollars.

Canon Talbot has told us that the Washington Cathedral will cost approximately $14,000,000.00, it is the National Cathedral in the National Capital and is depending, for its completion, upon contributions from the entire nation.

Here in Chicago, we have no such field to draw upon for funds. Ours is an entirely different problem for a strictly commercial city.

In the accompanying sketches, which are only intended as a means of bringing out a possible solution for our needs, I have tried to express the dominant position of the living Church, functioning in every branch of modern life and satisfying the inmost longings of starving souls.

The following figures explain the approximate estimate of costs, based upon present prices and computed by competent and responsible structural engineers.

ESTIMATE OF COSTS, BASED ON CURRENT PRICES PER CUBIC FOOT

	cu. ft.		per. cu. ft.	
CATHEDRAL	2,520,000	at	$1.10	$2,770,000.00
OFFICE BUILDING	3,190,000	at	.85	2,710,000.00
TOWER	325,000	at	1.50	485,000.00
TOTAL	6,035,000	at		$5.965,000.00

LANSDOWNE MEMORIAL MONUMENT

CLARENCE WILSON BRAZER, ARCHITECT

Doorway to a House on Benefit Street, Providence

(See reproduction of original drawing by O. R. Eggers on opposite page)

NO details of our early Colonial architecture have been more often photographed and sketched than those of the Colonial doorways in New England cities and towns.

The accompanying sketch is typical of early American architecture and shows with what skill and rare knowledge of form and good design the carpenter-architects of our early Colonial period set about their work.

The doorway that forms the subject of Mr. Eggers' sketch, as will be seen, is one of excellent proportion and the most correct design. Its artistic composition is greatly enhanced by the wrought iron newels and short hand rails placed on either side.

DOOR-WAY TO A HOUSE ON BENEFIT STREET,
PROVIDENCE, R. I.
THE AMERICAN ARCHITECT Series of Early American Architecture

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·EDITORIAL·COMMENT·

Monthly Review of Architectural Press

IN this issue, Mr. Egerton Swartwout contributes the first of a monthly series of reviews of the current architectural press.

Mr. Swartwout is widely known to the profession of architecture. For nearly a quarter of a century he has been actively in practice. Associated with Evarts Tracy, he has designed and built a large number of buildings of importance. He is a Fellow of The American Institute of Architects, a past president of the New York Chapter, A. I. A., and a member of the Board of Visitors to the Architectural School of Columbia University. Mr. Swartwout is also an honorary member of the Societe Nationale des Beaux-Arts, Paris, and was awarded the Medal of Honor of the New York Chapter, A. I. A., in 1920.

As an author, Mr. Swartwout has written "The Classic Orders of Architecture," "The Orders as Adapted to Modern Architecture" and many monographs on architectural topics.

What About 1922?

ARCHITECTURAL organizations in the East may very well take a leaf from the book of the Illinois State Society, and actively proceed towards the stabilization of the building industry during the coming year.

What is the proper plan for dealing with organized labor, and how can that plan be properly carried forward?

These questions have for more than six months seriously engaged the attention of architectural societies in the Middle West, particularly in Chicago, and while the achievement is not as satisfactory as everyone might wish, yet a forward movement has been made which would never have taken place had the profession in the Middle West quiescently ignored the menace of the situation.

Many trade agreements will soon expire and it would seem as if it was necessary for architects to concern themselves with just what the conditions of agreements made for the coming year will be and prepare to meet them.

There is no reason to doubt that what one section has done could be equally successfully done by another if the same amount of energy and unselfish activity was shown.

It is time to look the building situation squarely in the face and to work actively towards better conditions in the future.

The profession of architecture has grave responsibilities in these important matters and the questions involved are no more important than in the East.

More Shadows and Straws

WITH spreading headlines and the usual inaccuracy of statement, the New York daily papers have printed columns of Washington correspondence, setting forth the details of the discussion in the Senate of a bill requiring that a farmer, experienced and practical, be put on the Federal Reserve Board. The expediency of such a course interests us only as a general reader of newspapers. What specifically interests us is the statement made during the debate in the Senate that the fee paid to the architect of the $17,000,000 Federal Reserve Bank building, is excessive, and a wasteful expenditure.

The architect's fee, in this instance, was undoubtedly based on the rulings of the Institute, and it is therefore reasonable to assume that the Institute will consider it a duty publicly and emphatically at once to take steps to set before the Senate and the public at large, all the facts and that the architect now so unjustly assailed was in the matter of his fee exactly following the rule made and provided by the governing body of his profession.

A favorite "indoor sport" of Congress, whenever matters relating to building or architecture are discussed in that body, is to misinterpret the true functions of architects and endeavor to show that the Institute in its general attitude towards fees is in the nature of a trust.

This attitude is now many years old. It culminated when James Knox Taylor, then supervising architect of the Treasury Department, was hectored by a congressional committee during the course of an investigation which proved that the investigators did not in the slightest way understand the matters they were investigating.

Nor is it confined to Congress. During the early days of the Lockwood Investigation Committee, Samuel Untermeyer called the then president of the New York Chapter to the stand, and unsuccessfully endeavored to prove that in the matter of fees the profession of architecture was a combination only less dangerous to the common interests than the exactions of contractors and builders.

This journal raised a voice in protest at that time, and it now strongly objects to the misrepresentation made during the debate in the Senate.

Something should be done about it. The present attitude towards the profession is a shadow on its good name, and is the straw that indicates the direction of the wind of popular misconception of the true practice of architecture.

Will the *Journal* of the Institute, speaking for

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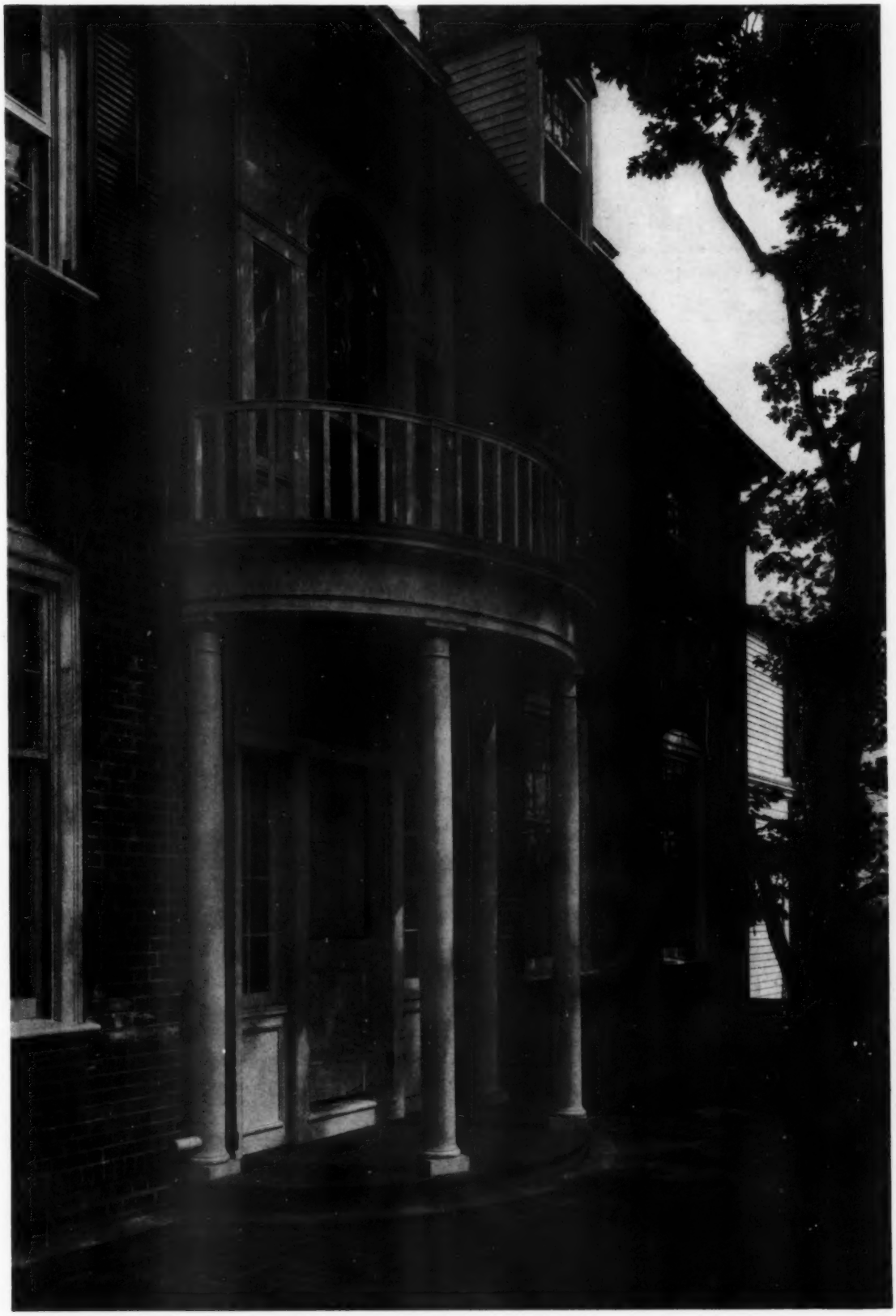
its board of directors, take any action in these matters or through a competently directed special committee seek to refute in the daily press the oft-recurring slanders on the profession? Something should authoritatively be done about it, and the responsibility assumed by the body whose rulings on practice and procedure are the basic causes for all of this loose talk.

Architectural Engineering

DURING his criticism of engineers functioning as architects, a noted British architect referred to this practice as "architectural engineering." It is actually engineering architecture, for architectural engineering is all engineering work done for, or under the direction of architects. It comprises the design and detailing of the structural framework of buildings, as well as the planning, specification and installation of light, heat, power, ventilation and sanitation. The Department of Architectural Engineering in THE AMERICAN ARCHITECT AND THE ARCHITECTURAL REVIEW is conducted upon this assumption. The architect is, as always, the master builder and stands between the owner and contractor. He is the commander-in-chief of the forces marshalled to erect a structure; his principal assistant is the chief-of-staff; the architectural engineer, the chief of the services of supply; his clerks-of-works and inspectors, the line officers. The architect throughout the ages has furnished something the builder alone cannot furnish, something men need and which, when they receive, they greatly appreciate. It is more than the mere building of a house. It is an intangible thing. which one senses but can rarely define. This cannot be given by the man whose mind is absorbed in the osseous parts of the form and the material things which contribute to physical rather than mental satisfaction, however able he may be. Structural engineering made its first appearance in any standard dictionary about twenty-five years ago. Architectural engineering is not yet in the dictionaries. The first course in architectural engineering was established about sixteen years ago and the first students were young men who had entered school for a course in architecture, but whose interest in art forms was found to be inferior to their interest in purely structural details. Primarily structural, the course of study, in architectural engineering now includes all the engineering features of building work. The development of this engineering specialty has helped and not retarded architecture. It relieves the architect of much detail, and enables him properly to perform his function in the body politic, namely, to build pleasingly with due regard to fitness, service and economy.

GARAGE OF H. BELLAS HESS, ESQ., HUNTINGTON, L. I., N. Y.
HOWELLS & STOKES, ARCHITECTS



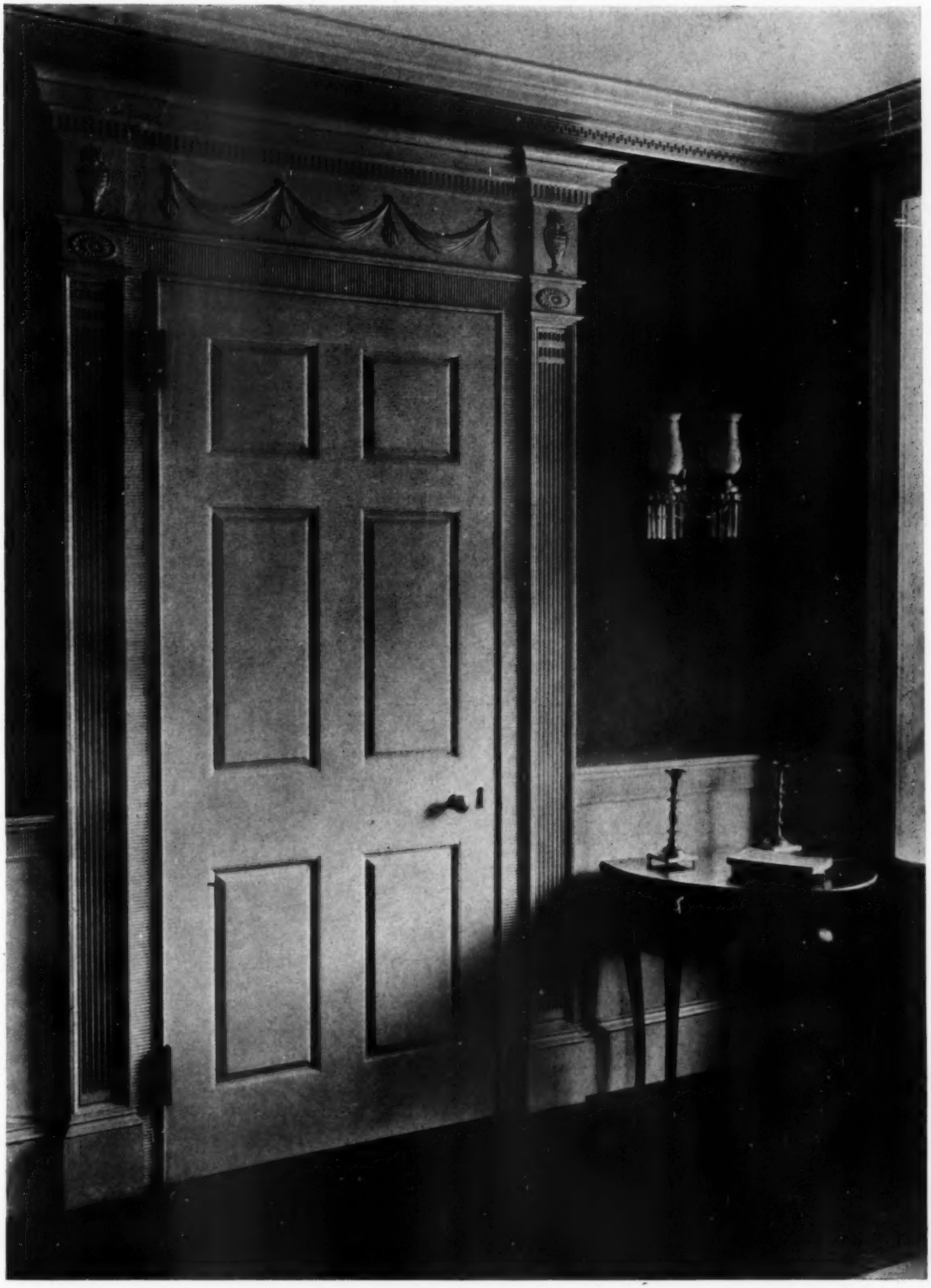
DETAIL OF TERRACE FRONT

HOUSE OF DR. LYNN L. FULKERSON, RIVERDALE, NEW YORK CITY

ARCHITECTURAL DETAILS FROM THE OFFICE OF

DWIGHT JAMES BAUM, ARCHITECT

XUM



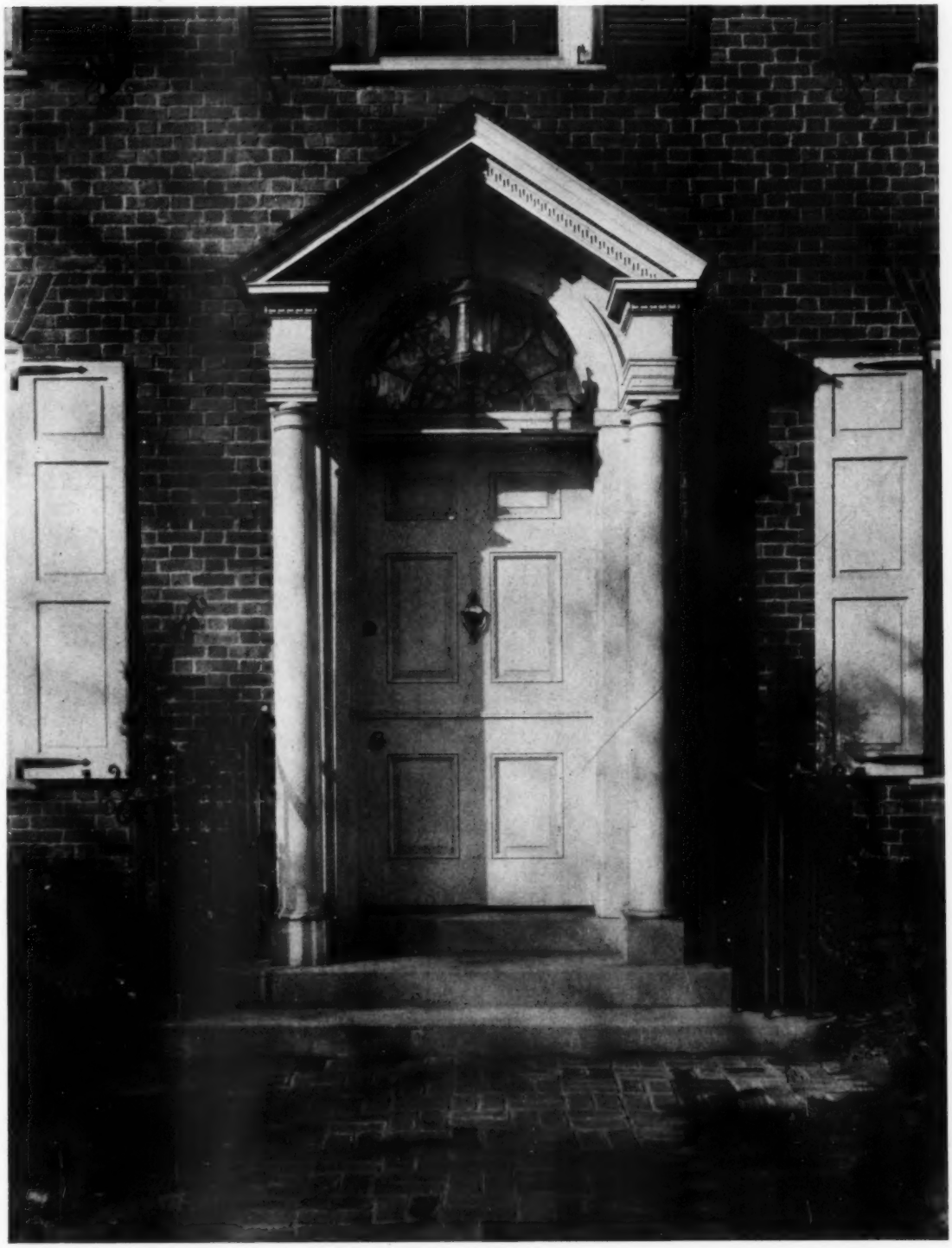
DETAIL OF DOOR IN LIVING ROOM

HOUSE OF DR. LYNN L. FULKERSON, RIVERDALE, NEW YORK CITY

ARCHITECTURAL DETAILS FROM THE OFFICE OF
DWIGHT JAMES BAUM, ARCHITECT

XUM

PUBLIC LIBRARY

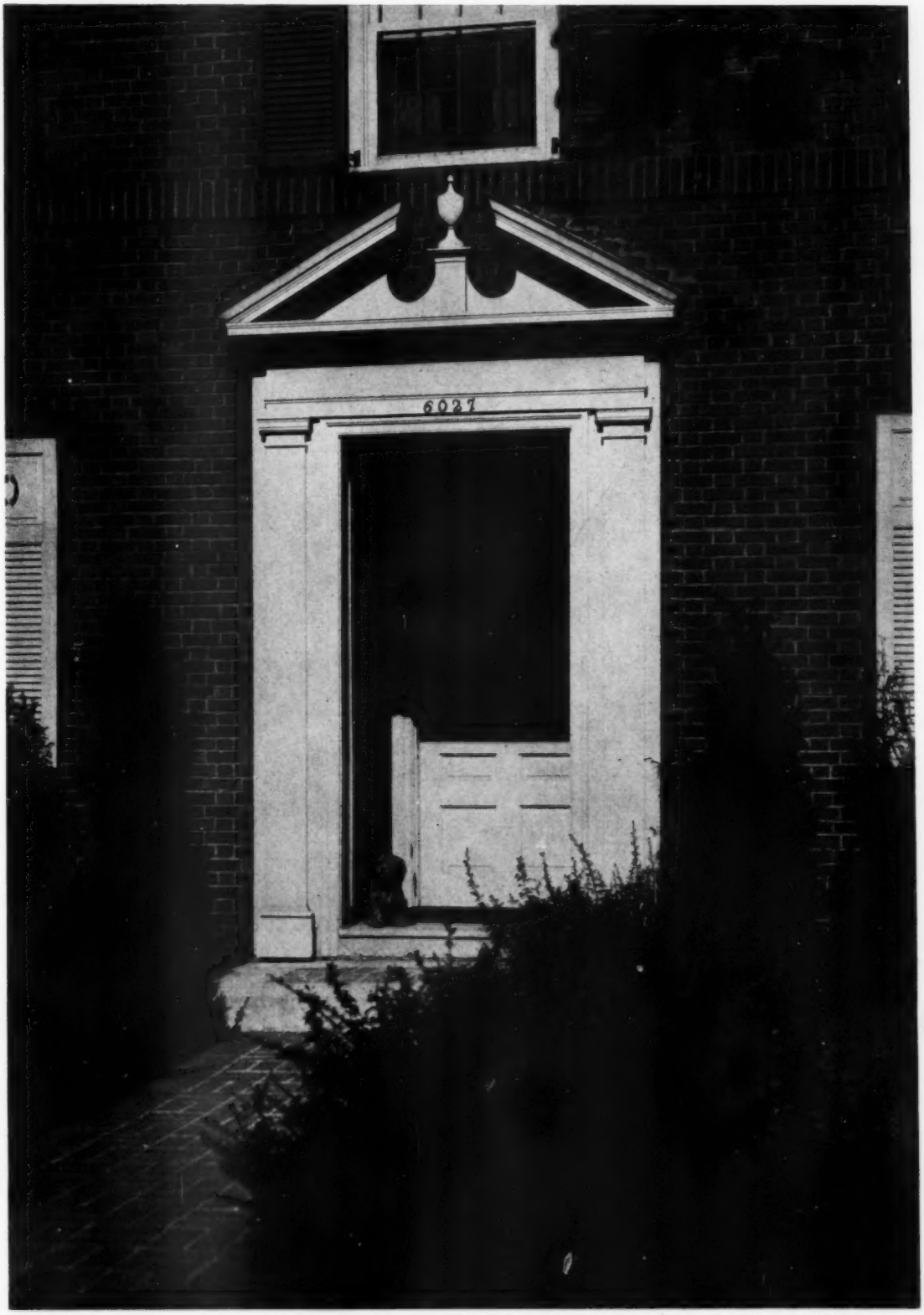


ENTRANCE DETAIL

HOUSE OF DR. LYNN L. FULKERSON, RIVERDALE, NEW YORK CITY

ARCHITECTURAL DETAILS FROM THE OFFICE OF
DWIGHT JAMES BAUM, ARCHITECT

XUM



ENTRANCE DETAIL
HOUSE OF ROBERT FEIN, ESQ., RIVERDALE, NEW YORK CITY
ARCHITECTURAL DETAILS FROM THE OFFICE OF
DWIGHT JAMES BAUM, ARCHITECT

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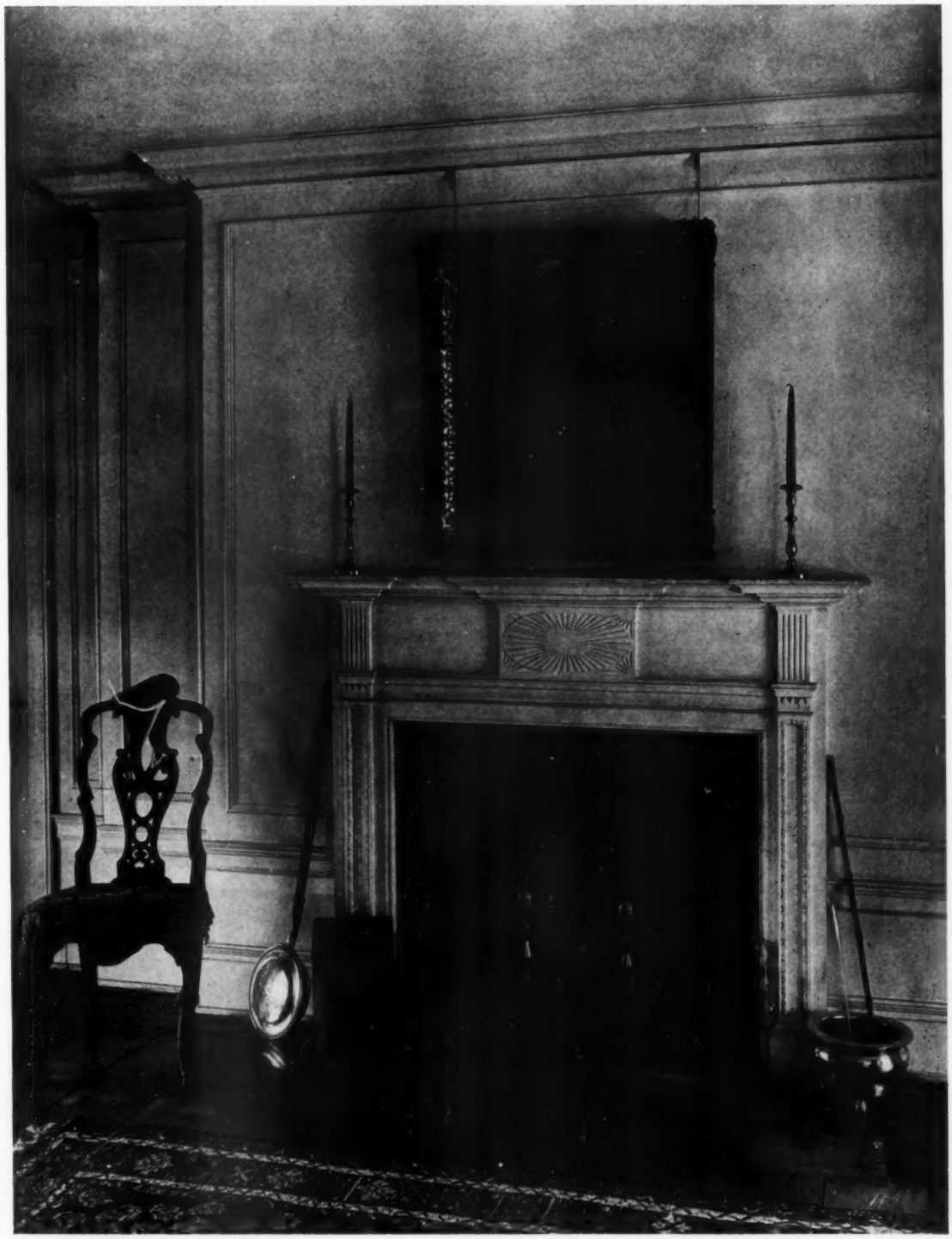

DETAIL IN DINING ROOM

HOUSE OF CLEVELAND H. DODGE, ESQ., RIVERDALE, NEW YORK CITY

THE MANTEL IS AN ORIGINAL FROM A HOUSE OPPOSITE FANEUIL HALL IN BOSTON. THE PAINTING ABOVE IS BY GILBERT STUART

ARCHITECTURAL DETAILS FROM THE OFFICE OF DWIGHT JAMES BAUM, ARCHITECT

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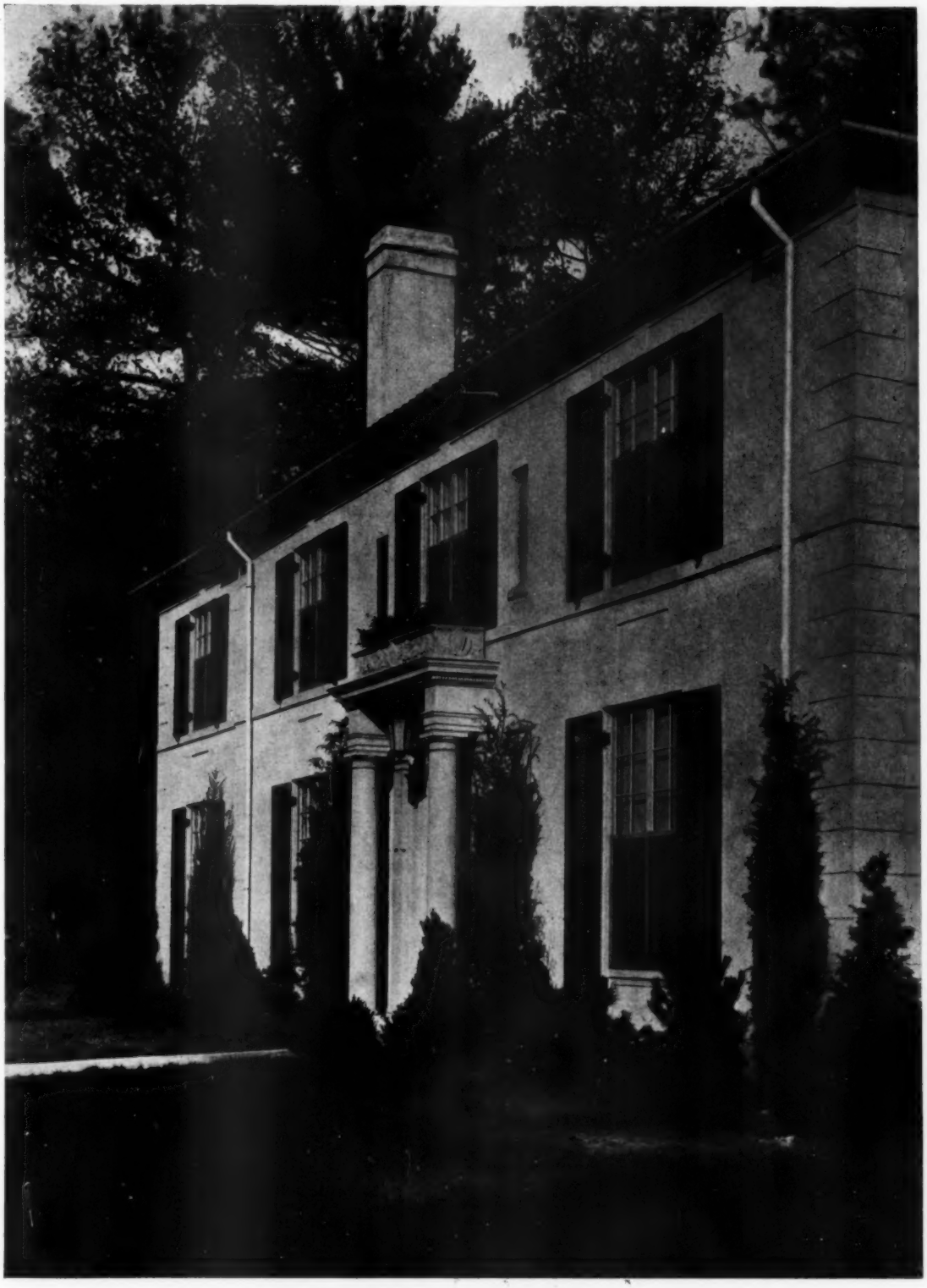
ENTRANCE FRONT

HOUSE ON ESTATE OF CLEVELAND H. DODGE, ESQ., RIVERDALE, NEW YORK CITY

ARCHITECTURAL DETAILS FROM THE OFFICE OF
DWIGHT JAMES BAUM, ARCHITECT



STREET FRONT, HOUSE OF JUDGE NASH ROCKWOOD,
WEST 246TH STREET, NEW YORK CITY
ARCHITECTURAL DETAILS FROM THE OFFICE OF
DWIGHT JAMES BAUM, ARCHITECT

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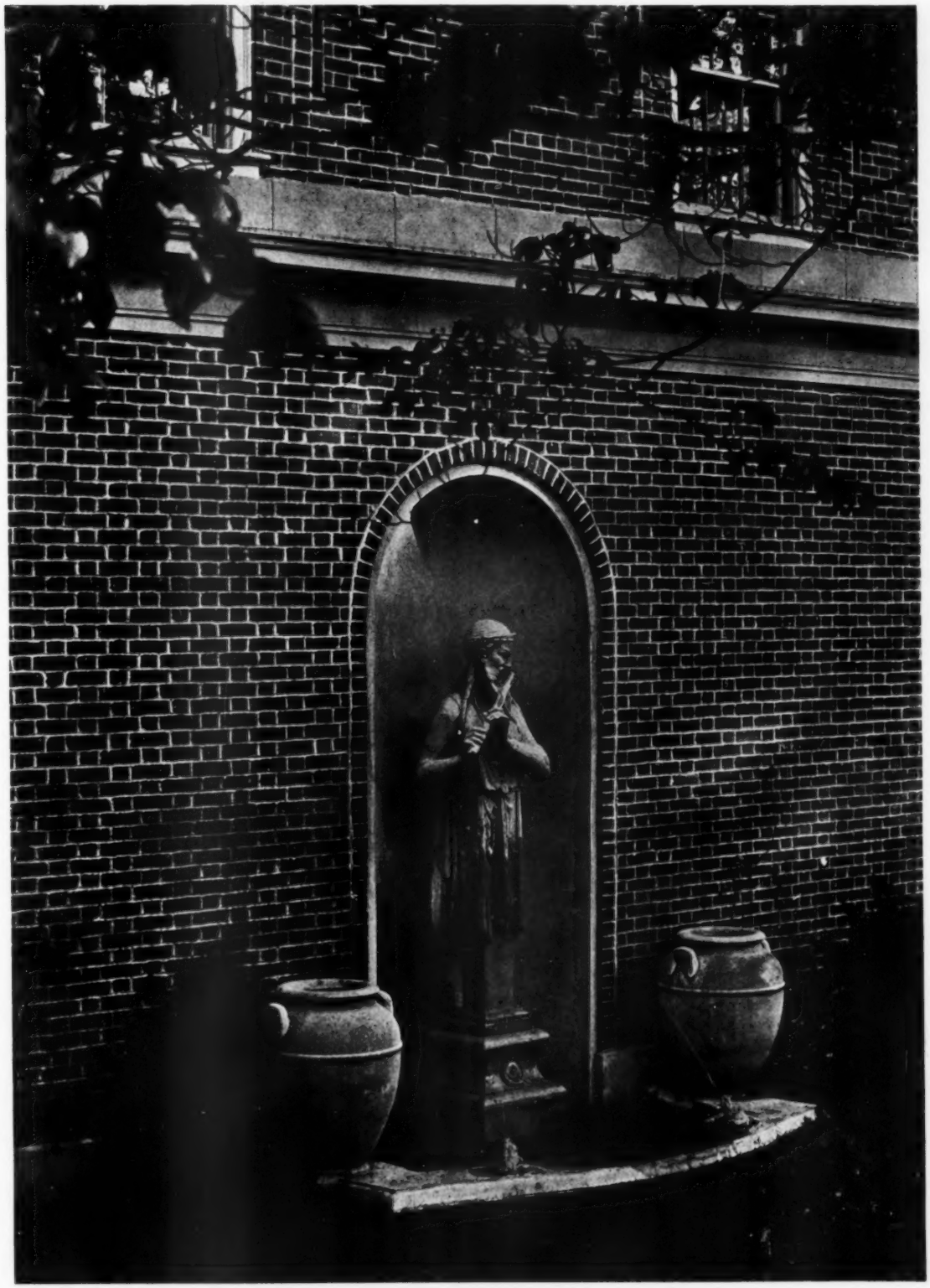

GARDEN FRONT DETAIL

GARAGE ON ESTATE OF WILLIAM P HOFFMAN, ESQ., RIVERDALE, NEW YORK CITY

ARCHITECTURAL DETAILS FROM THE OFFICE OF
DWIGHT JAMES BAUM, ARCHITECT

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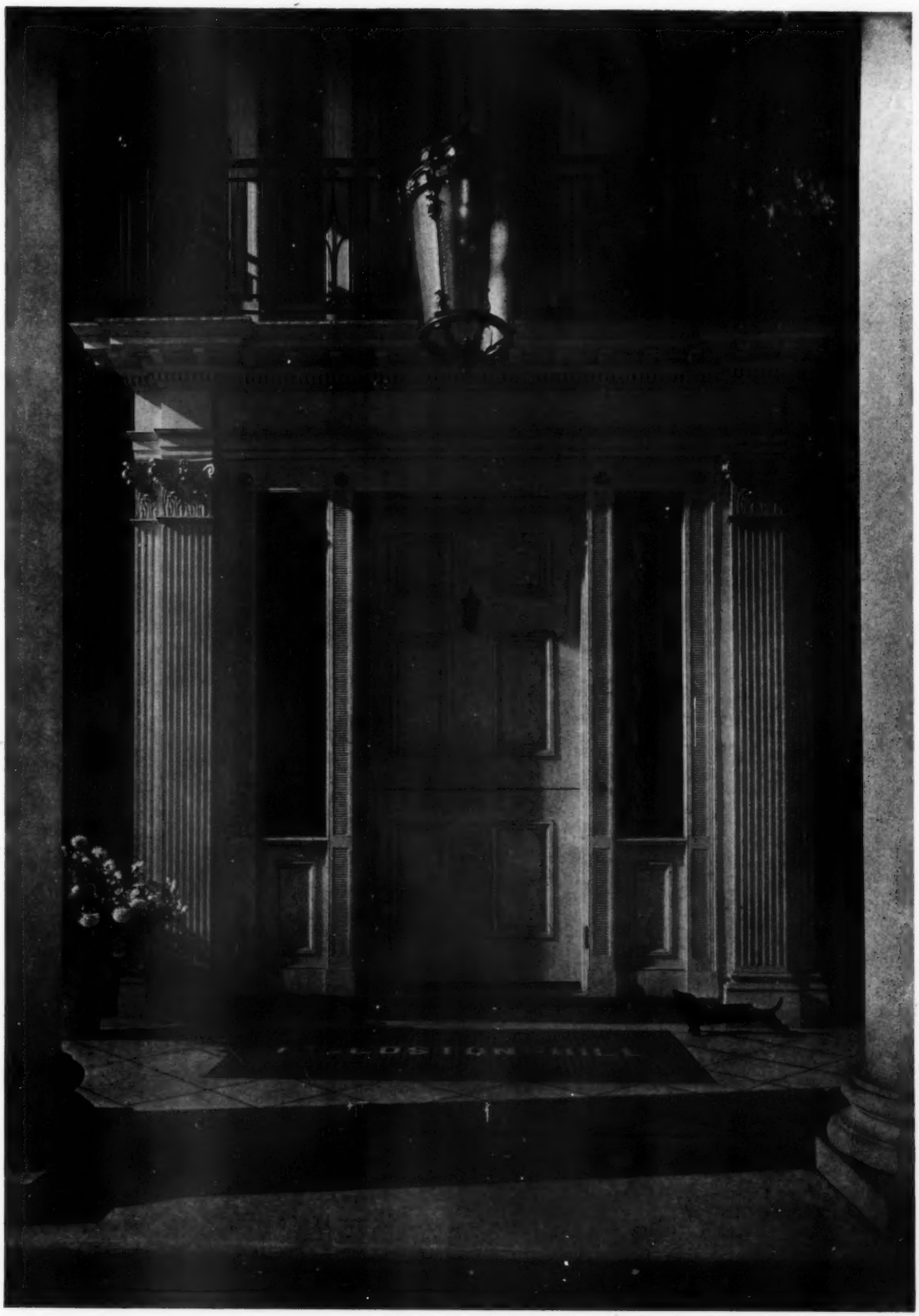

ENTRANCE DETAIL

HOUSE OF EDWARD C. DELAFIELD, ESQ., FIELDSTON HILL, NEW YORK CITY

ARCHITECTURAL DETAILS FROM THE OFFICE OF
DWIGHT JAMES BAUM, ARCHITECT

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VIEWS IN LIVING ROOM

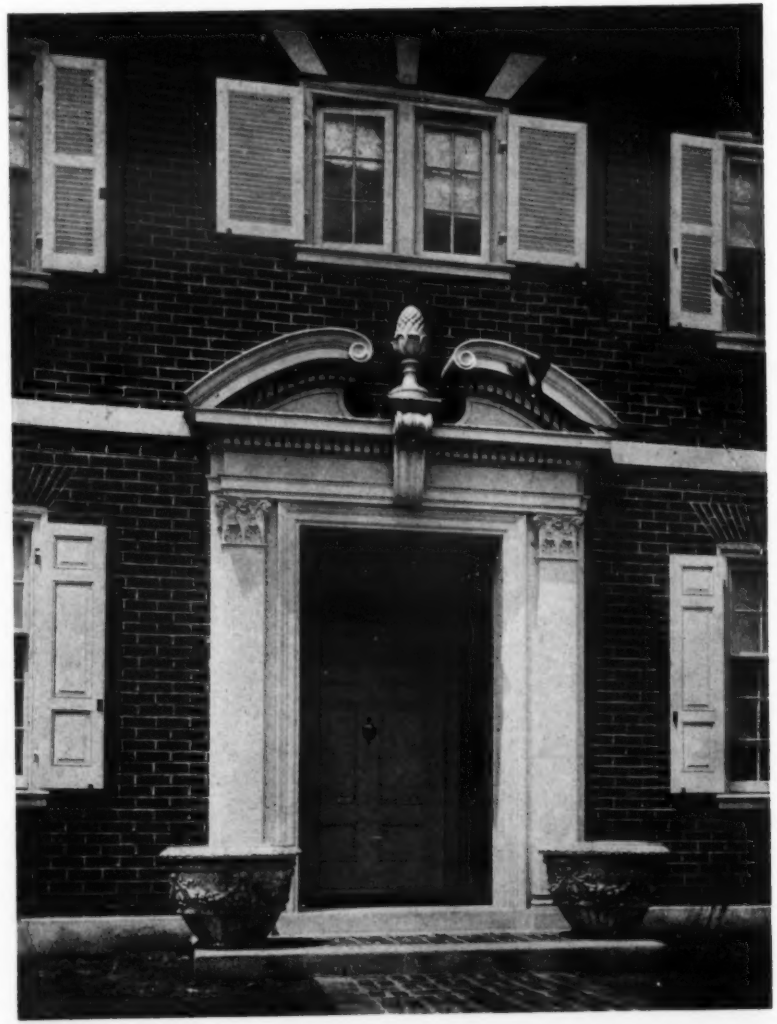
House of Edward C. Delafield, Esq, Fieldston Hill, New York City

View at left shows Portrait of Hon. John Bigelow by Sargent

ARCHITECTURAL DETAILS FROM THE OFFICE OF
DWIGHT JAMES BAUM, ARCHITECT

ENTRANCE DETAIL

HOUSE OF JOHN I. LOLLER, LITTLE FALLS, N. Y.



ENTRANCE DETAIL

HOUSE OF M. E. SHEA, ESQ., RIVERDALE, NEW YORK CITY

ARCHITECTURAL DETAILS FROM THE OFFICE OF DWIGHT JAMES BAUM, ARCHITECT

VOL. CXXI, NO. 2384 JANUARY 4, 1922

STUDY ENTRANCE

HOUSE OF DWIGHT JAMES BAUM, RIVERDALE, NEW YORK CITY

DETAIL OF SUN PARLOR

HOUSE OF J. M. R. LYETH, ESQ., FIELDSTON, NEW YORK CITY

ARCHITECTURAL DETAILS FROM THE OFFICE OF DWIGHT JAMES BAUM, ARCHITECT

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MAIN ENTRANCE DETAIL

HOUSE OF A. V. OLCOTT, ESQ., WEST 250TH STREET, NEW YORK CITY

ARCHITECTURAL DETAILS FROM THE OFFICE OF
DWIGHT JAMES BAUM, ARCHITECT

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GARDEN FRONT

HOUSE OF JOSEPH BUSH, ESQ., RIVERDALE, NEW YORK CITY

ARCHITECTURAL DETAILS FROM THE OFFICE OF
DWIGHT JAMES BAUM, ARCHITECT

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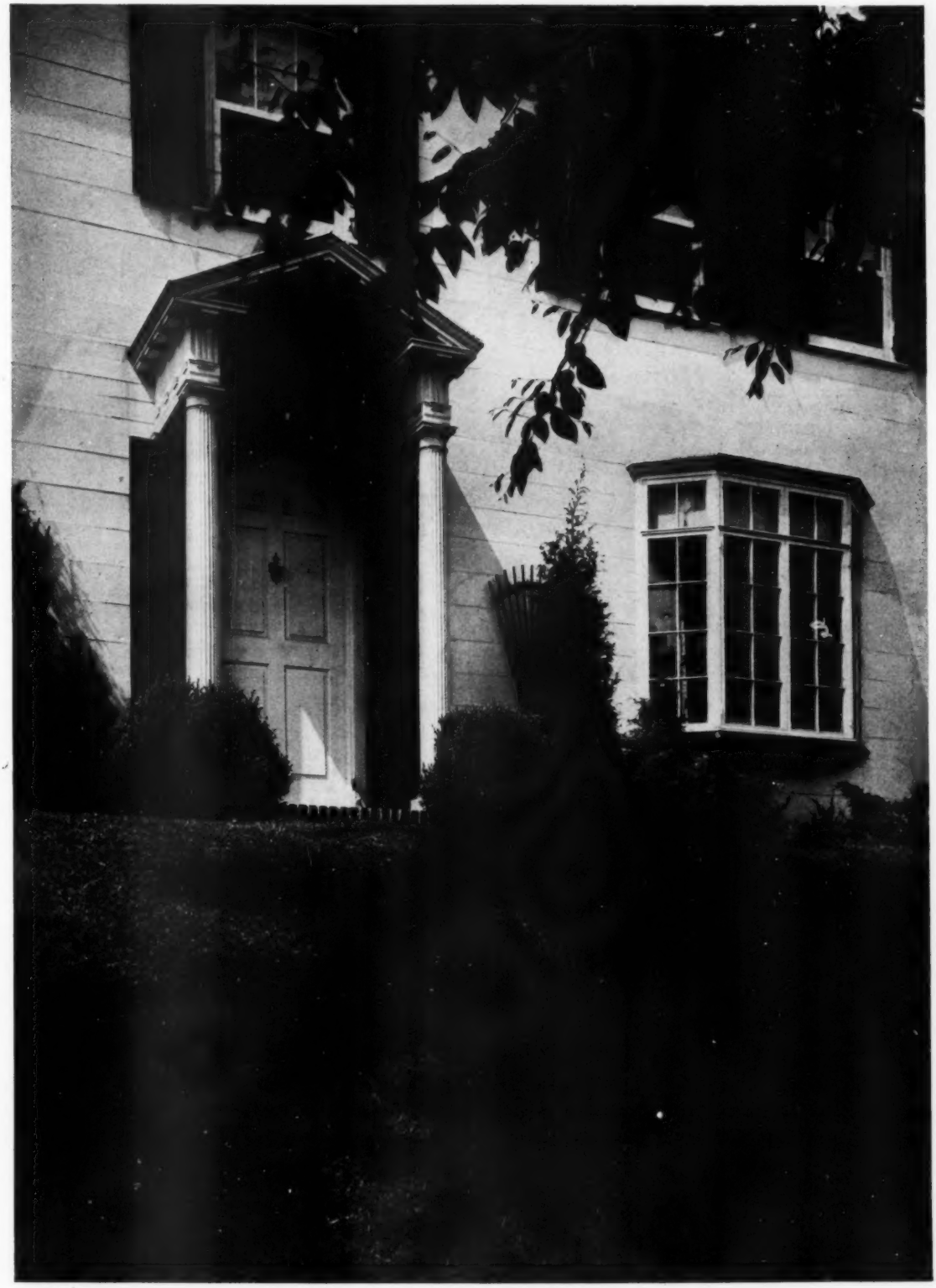

DETAIL OF TERRACE FRONT

HOUSE OF EDWARD P. SCHELL, FIELDSTON, NEW YORK CITY

ARCHITECTURAL DETAILS FROM THE OFFICE OF
DWIGHT JAMES BAUM, ARCHITECT

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ABOVE:—DETAIL OF SERVICE WING OF A HOUSE ON ESTATE OF CLEVELAND H. DODGE, ESQ., AT RIVERDALE, NEW YORK CITY

ABOVE, AT LEFT:—DETAIL OF GARAGE FOR DR. T. DUNCAN BULKLEY, FIELDSTON, NEW YORK CITY

AT LEFT:—DETAIL OF A HOUSE AT FIELDSTON, NEW YORK CITY

ARCHITECTURAL DETAILS FROM THE OFFICE OF DWIGHT JAMES BAUM, ARCHITECT

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XUM

NOTES ON THE ILLUSTRATIONS

The Lansdowne Memorial Monument

By Clarence Wilson Brazer, *Architect*

THE general theme of the design of this World War Monument is the upholding of the integrity of the World by the Allies and in particular our own America and the men from Lansdowne.

The earth depicted by a globe in full relief is guarded by four carved, victorious American eagles at rest with the olive branch of peace in one claw but on the alert with the arrows of war in the other. The supporting pedestal is crowned by a frieze upon which are carved the coat of arms of our country, alternating with the arms of our Allies, upon two garlands of twined laurel leaves symbolic of our victory. Interspersed are the insignia buttons of the four branches of the services, the Army, Navy, Marines and Aircraft. Below the frieze is a circlet of forty-eight stars representing each of our states. Upon the front face of the pedestal between two inverted palm leaves symbolizing heroic death are the names of our men who died in service, while upon the opposite side is to be found a dedicatory inscription of the appreciation by their fellow townsmen of the great sacrifices made and the inspiration given to future generations.

An endeavor has been made to make the monument noble in conception, heroic in size, restrained in execution, and withal unusual and monumental.

Architectural Details from the Office of Dwight James Baum, Architect

FOLLOWING a certain method of illustrating the work of the offices of architects throughout the United States, there is presented in this issue a series of sixteen full page illustrations of the architectural details from the office of Dwight James Baum, architect, Riverdale-on-the-Hudson, New York.

As will be noted, most of the work illustrated is located in that part of New York City lying West of Van Cortlandt Park. This rather unusual tract of land has received the most careful attention in its laying out, and principally through the efforts of Mr. Baum's office, the character of the suburban dwelling erected in this restricted area leaves nothing to be desired.

While some of the houses have heretofore been, in part, illustrated in The American Architect, the details presented have not been shown before. They represent the character of the work of Mr. Baum's office and it is believed that they will have a large suggestive value.

Well in the Abbey of Sassovivo, Foligno, Italy

THE Benedictine Abbey of Sassovivo lies among the hills about one and one-half hours (5 kilometers) from Foligno. The building is impressive. At one end rises the church with a low campanile and from it stretches a long and almost unbroken curtain of masonry behind which lie the conventional buildings. The ground on three sides falls steeply to the torrent far below. The buildings are now used by a farmer and within the gate is a scene of miserable squalor. The church and cloister, however, remain unharmed, and it is the cloister that forms the interest.

In the center of the cloister stands a well built much later than the cloisters and which bears the date of 1623. The designer is supposed to be M. Piero de Maria. One is struck by the beauty of the iron work and graceful outline which the perspective presents.

Awards in Birch Burdette Long Competition

THE Birch Burdette Long Sketch Competition of 1921 for sketches of buildings or of an architectural character has just been judged at the Architectural League of New York by Mr. Howard Greenley, President of the League, Mr. Charles Z. Klauder of Philadelphia, Mr. Bertram G. Goodhue of New York, Mr. Birch Burdette Long of New York and Mr. Eugene Clute of New York.

The competition produced some exceedingly unusual and interesting sketches, all of which are going to be on exhibition in the League's rooms at No. 215 West 57th Street. This is but one of the many useful and very beneficial works that the League is now doing along with the policy of the educational program which has been mapped out.

The prize winners are as follows:

1st prize of $100.00 Mr. Kenneth J. Conant, Cambridge, Mass.
2nd prize of 50.00 Mr. Robert A. Lockwood, Los Angeles, Cal.
3rd prize of 25.00 Mr. Otto F. Langmann, New York City.
4th prize of 15.00 Mr. Elliot L. Chisling, New York City.

Six $10.00 prizes to:

Mr. C. H. Nelson, Alfred University, Alfred, N. Y.
Mr. W. H. Butterfield, New York City.
Mr. John Wenrich, Rochester, New York.
Mr. E. Maxwell Fry, Liverpool School of Architecture, Liverpool, Eng.
Mr. Lionel H. Piries, West Philadelphia, Pa.
Mr. Arthur G. Wilson, Montreal, Canada.

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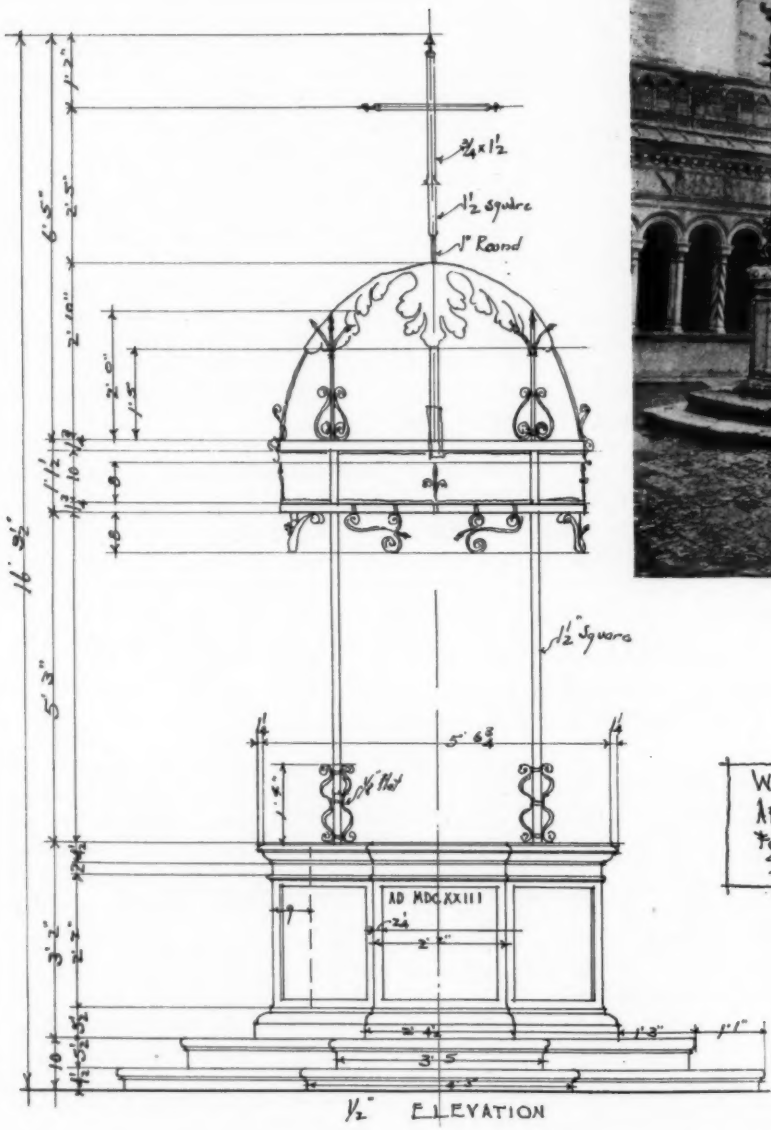
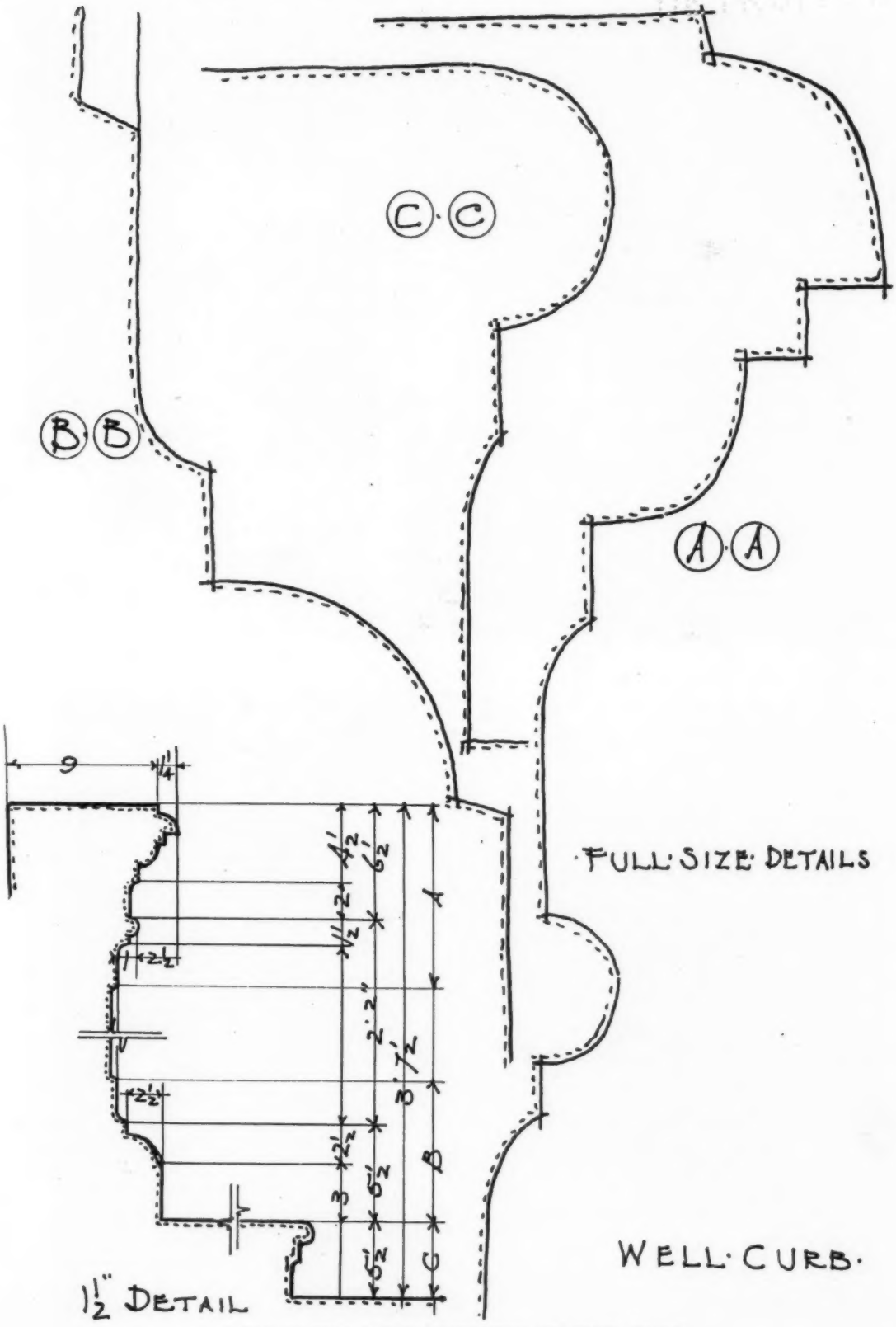


WELL · IN · THE · ABBEY SASSOVIVO FOLIGNO ITALY 4/21

MEASURED AND DRAWN BY R. M. BLACKALL, 35TH HOLDER, ROTCH TRAVELING SCHOLARSHIP

THE AMERICAN ARCHITECT, SERIES II.
FRENCH AND ITALIAN DETAILS



WELL IN THE ABBEY SASSOVIVO, FOLIGNO, ITALY

MEASURED AND DRAWN BY R. M. BLACKALL, 35TH HOLDER, ROTCH TRAVELING SCHOLARSHIP

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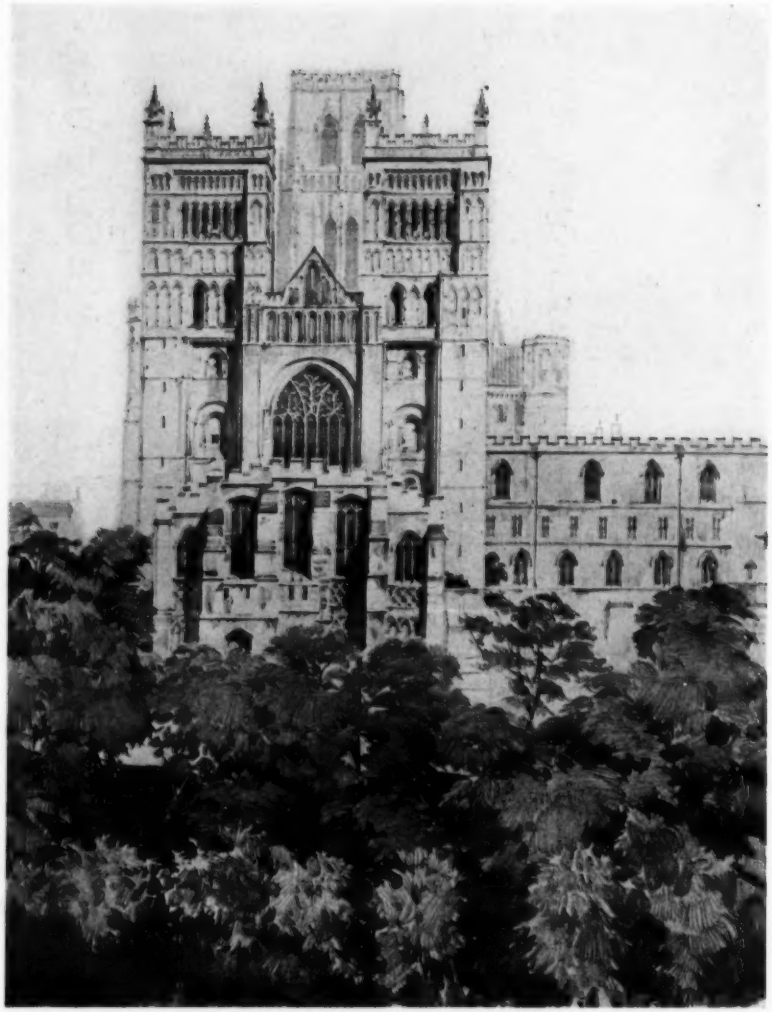
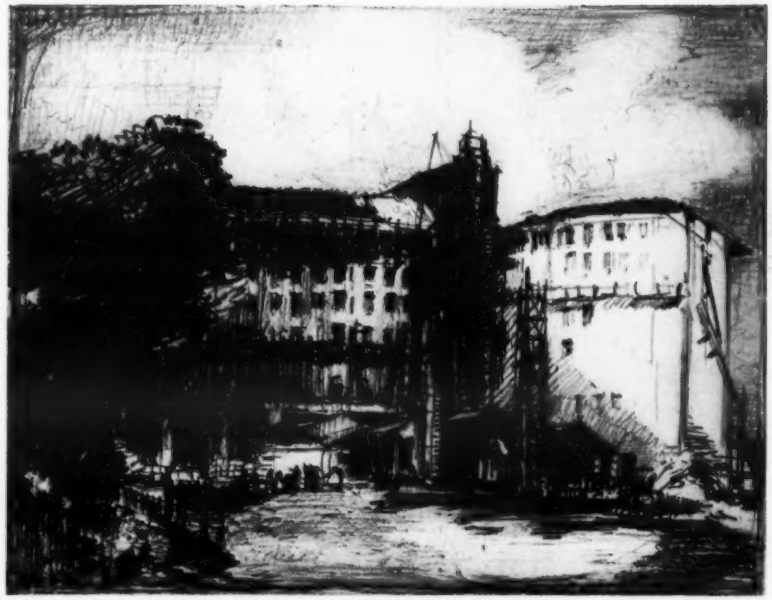


FIRST PRIZE—ONE HUNDRED DOLLARS

KENNETH JOHN CONANT HARVARD UNIVERSITY



SECOND PRIZE—FIFTY DOLLARS

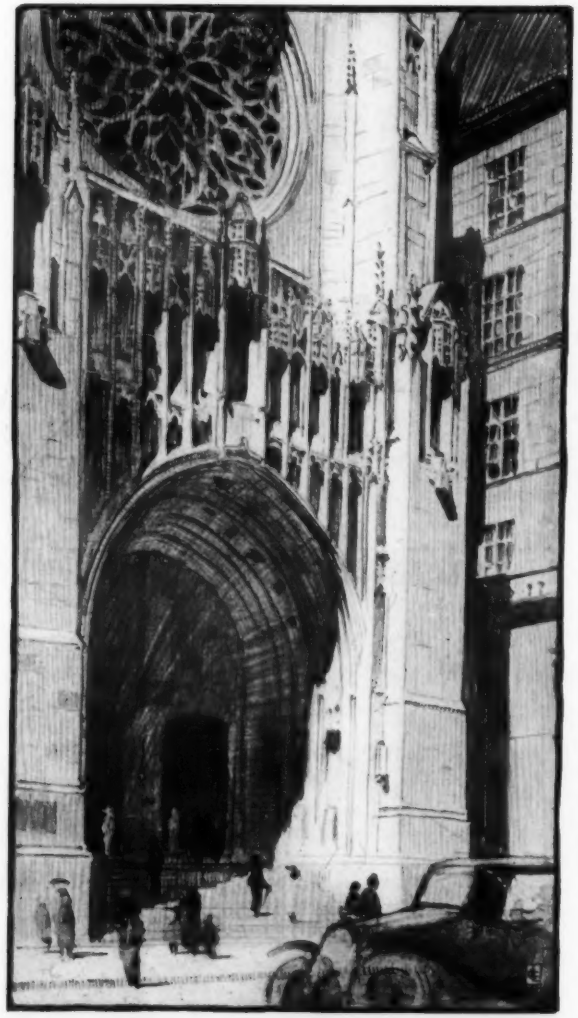
ROBERT A. LOCKWOOD, LOS ANGELES, CAL.

BIRCH BURDETTE LONG SKETCH COMPETITION

THIRD PRIZE—TWENTY-FIVE DOLLARS

OTTO F. LANGMANN, NEW YORK CITY

BIRCH BURDETTE
LONG
SKETCH COMPETITION



FOURTH PRIZE—FIFTEEN DOLLARS

ELLIOT L. CHISLING, NEW YORK CITY

LIONEL H. PRIES, WEST PHILADELPHIA, PA.

E. MAXWELL FRY, LIVERPOOL (ENG.) SCHOOL OF ARCHITECTURE

A PRIZE OF TEN DOLLARS WAS AWARDED TO EACH OF THE SKETCHES ON THIS PAGE

BIRCH BURDETTE LONG SKETCH COMPETITION

ARTHUR G. WILSON, MONTREAL, CANADA

LEGAL DEPARTMENT

Conducted by

CLINTON H. BLAKE, Jr., of the New York Bar

I HAVE emphasized many times in the pages of THE AMERICAN ARCHITECT and elsewhere the very great desirability of the architect securing a definite written contract from his client, before proceeding with his work. Curiously enough, within the last ten days, I have had submitted to me two cases which led me to say a word of caution in this connection: If the architect is sufficiently interested in protecting his rights and placing matters on a business basis to secure a written contract, he should take such slight additional trouble as may be required to make sure that the written contract which he does secure is in proper form and covers the particular work in hand.

The ideal, of course, is for each architect to have a special form of contract adapted to the particular needs of his own practice. The preparation of such a contract is not a matter of great difficulty or great expense, and once the general form is prepared, it can be used repeatedly by the architect and readily adapted by him to the requirements of his different clients. The standard contract prepared under the authority of The American Institute of Architects is a good general form of contract. A contract prepared to meet the special practice and needs of each architect would be preferable, because manifestly no general form of contract, such as the Institute form, can meet all of the requirements of different architects with varying kinds of practice. If, however —and this is the point which I wish especially to emphasize—a special form of contract is to be used, it should be properly prepared and the architect should be sure that it does protect him, as it is meant to do, and that it covers the requirements of his particular practice. Unless he is prepared, therefore, to secure proper advice and have such a contract prepared in a proper way, he would much better adhere to the general Institute form of contract.

The two cases to which I referred above are good examples of the damage that may result where an architect undertakes to prepare a special form of contract himself or to accept, without proper advice, a form of contract presented to him by the client.

In the one case, the architect was employed to prepare plans for and to superintend the erection of a large public building. A rather unusual form of roof construction was a feature of the work. After the structure had been, as it was thought, completed, but before the final payment had been made or the final certificate issued, it developed that the roof and dome as built were defective and that this work would have to be rebuilt. The architect refused to give a certificate to the contractor, and required that the roofing be placed in proper shape. The contractor became insolvent and the owner undertook, under the terms of the contract, to complete the work and charged the expense of so doing to the contractor.

The work was properly completed in this way, and after the contractor had been credited with all sums due him and debited with the cost of repairing the roof, it was found that the total cost of the building did not exceed the original price for which the contractor had agreed to do the work. The architect, however, by reason of the contractor's default, was called upon to attend to the letting of the new contract for making good the defects in the roofing and to superintend the removal of the old work and the installation of the new. As the job was a large one, this additional service called for a considerable amount of time and attention.

Upon the completing of the work, the architect felt that he was entitled to receive in addition to his percentage on the contract cost, a payment for the additional time and services rendered by him in attending to and superintending the reconstruction work made necessary by the default of the general contractor. As a matter of equity and on the basis simply of what would be fair, his position under the facts in the case was entirely reasonable. It appeared, however, that he had signed a contract, without receiving advice regarding it, and that his rights and the rights of the client were accordingly to be governed so far as the strict legal side of the matter was concerned, by the written contract entered into. The contract which he signed was in general and so far as it went, a good contract. It covered both the client and the architect fairly on most of the questions which should be covered, but it did not cover the situation as between architect and owner, arising from the insolvency of the contractor.

If the contract had been silent with respect to the rules of practice of the Institute, it is possible that the situation might have been saved by reading into the contract in some way paragraph seven of the present Rules of Practice of the Institute, which provides that if the architect be put to additional labor or expense by the insolvency of the contractor, he is entitled to be paid for the extra work and expense involved. The difficulty in the case to

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which I refer is, that the contract in that case made specific reference to certain provisions and paragraphs of the Rules of Practice of the Institute, such as article nine, covering the proportionate payments to be made and the time when they should be made, but did not make any reference to paragraph seven. The legal effect of this was to indicate clearly that it was the intention of the parties that only the paragraphs specifically referred to were to be incorporated in the agreement. This being so, it followed that it would be presumed to be the intention of the parties that the Institute provisions covering the additional payment to the architect in case of the insolvency of the contractor should not apply. So far as the legal situation is concerned, therefore, the architect has been placed in the position of having performed extra services of considerable value and involving a considerable amount of time, without having any legal right to request remuneration therefor.

It is evident that, in the case referred to, the architect would have been better off, so far as the specific point of this extra work is concerned, had he signed the Institute form of contract, or probably even if he had not entered into any contract. Had no contract been entered into, it might have been possible to argue that the established rules of practice of the Institute should by implication apply, and that under such rules, the extra payment sought should be paid.

THE second case to which I have reference is very similar. The architect prepared himself a written contract, covering the services to be performed. He prepared preliminary studies and full-size details and working drawings, made numerous trips personally or through his office representatives to the scene of the proposed work in a distant state, and then was notified by the client that the latter had decided not to make use of the plans and not to go ahead with the work contemplated. The contract, as drawn, provided for the percentage to be paid to the architect, but it did not specify the instalments in which the payments were to be made and was in fact so worded, as to give some ground for an argument that payment was to be made only in case the work was done. This was not, I am convinced, the intention of either of the parties, and yet the written agreement will control and cannot be ignored. If no contract had been made, the Institute rules might have been applied, under proof of custom, or if the Institute form of contract had been employed, the point would have been covered. Indeed, the architect could have sued for the reasonable value of the work done, without proof of any contract, and upon proper proof, have recovered the value of the studies, plans and details. As the matter stands, he has jeopardized this right by entering into a contract which puts it out of his power to proceed simply for the reasonable value of the work done, and by failing to include in this contract the ordinary provision covering the method and instalments in which the agreed fee percentage shall be paid.

I would not be understood as discouraging in the slightest the use by architects of the written contract. On the contrary, as I have already said, I have repeatedly urged the advisability, and in my opinion necessity, of securing in every case where it is at all possible to do so a definite written contract covering the relationship existing between the architect and the client. What I wish to emphasize in the present discussion is simply the danger of entering into the written contract without taking the small amount of time and trouble necessary to secure proper advice and be assured that the form of contract adopted is fair and has no pitfalls which are not apparent to the layman. The architect can, without difficulty and at very moderate expense, secure from his attorney a proper form of contract which will not only protect him on all of the points covered by the Institute form of contract, but which will protect him on the special points made necessary by the particular character of his practice and will be adapted to his own needs and requirements.

If the architect deliberately decides that he does not care to have any contract, in the belief that to insist upon one will jeopardize his relations with his clients, it will be entirely logical for him to proceed with his work, without any contract protection. If, on the other hand, he believes, as architects are more and more coming to understand, that there is too much involved to allow the matter of his compensation and other rights and liabilities to remain unsettled and in a purely nebulous state, and decides to place his work on a contract basis, then by all means he should make sure that the contract into which he enters is a proper one and protects him as it should protect him. If adopted upon proper advice and worked out with proper care, the contract will in all likelihood be the means of saving the architect many thousands of dollars, entirely aside from loss of time and misunderstandings with his clients. If it is adopted and used carelessly, however, without proper advice and without its form having been carefully considered—if the architect, in a word, is not prepared to see that the contract is properly prepared, if prepared at all—then he would much better adhere strictly to the American Institute form of contract or proceed on nothing more definite than the ordinary custom and practice of the profession.

RECENT LEGAL DECISIONS

UPON the failure of one party to a construction contract to pay to the other instalments due him for work performed, the latter party (the contractor) has one of two courses open to him, viz: he may rescind the contract and recover what was due thereunder up to the date of rescission, or in the alternative, he may proceed with the contract and sue for the amount due. He can not, however, both rescind the contract and recover prospective damages.

Ryan vs. Rodgers and Hagerty, 197 *N. Y. A. D.* 662.

* * *

WHERE the contractor properly performs his work and the architect, acting under a mistake, refuses to issue a certificate, the certificate will be excused, where the mistake is of such a character, as to imply an arbitrary attitude or bad faith on the part of the contractor. Under this rule, in a case where the architect is not authorized by the terms of the contract to determine that the delay of the contractor caused a cement floor to break up, this refusal to issue a certificate on the ground that this was the case was a mistake which would excuse the non-production of the certificate by the contractor.

Shine vs. Realty Company (Wisconsin) 172 *N. W. Rep.* 750.

* * *

ORDINARILY, the architect may make his certificate on his own knowledge and on such evidence as he chooses to receive, without being bound by technical legal rules of evidence, but the fact that he believes the contractor has failed to comply with the plans in one particular does not justify him in acting arbitrarily in refusing certificates or arriving at decisions as to other particulars of the contractor's work.

Lund vs. McClinton (Missouri) 205 *S. W. Rep.* 240.

* * *

WHILE an architect is not disqualified from acting as an arbitrator, because he is in the employ of the owner, if it appear that, in addition to his professional relationship, he has any other personal interest in the matter involved, which may conflict with his duty to act fairly to both parties, the situation is thereby changed and the courts will be more inclined, in such a case, to hold that the architect is disqualified to act.

Law vs. Toronto, 47 *Ontario Law Reports* 251.

* * *

WHERE one architect is a silent partner, the certificate signed by another architect, who is an active partner, is sufficient.

Board of Education vs. Wright-Osborne Co. (Utah), 164 *Pacific Rep.* 1033.

THE term "working days" in a construction contract means days when the construction should be reasonably expected to proceed, weather conditions and the general character of the work considered.

Contracting Co. vs. Kenmore, 171 *N. Y. S.* 673.

* * *

IF an architect is familiar with the location of the property on which it is proposed to erect a building and prepares plans for the building, and it appears that the building cannot be erected on such property, because to do so would be in violation of a municipal ordinance, the architect cannot recover compensation for the preparation of the plans. This is true, even though he were directed by the owner to draw the plans, if the owner, at the time of directing him to do so was ignorant of the ordinance and the architect did not draw the facts to his attention.

Bebb vs. Jordan (Washington) 189 *Pacific* 553.

* * *

A BUILDER agreed to erect an apartment house for the sum of $33,000. He sublet all of the work which was done by the sub-contractors. The sub-contractors filed liens aggregating $27,000. One of the sub-contractors sued to foreclose his lien, which was for lumber furnished to the job, and made the owner, the general contractor and all of the other sub-contractors parties to the foreclosure proceedings. It was determined by the Trial Court that there had been defective work done, which occasioned damage to the sum of $3,300. The court held that while the general contractor was responsible to the owner for the defective work and materials of the sub-contractors, the latter were in turn liable to the general contractor, and that the $3,300 damage and loss occasioned by the defective work should be apportioned among the several delinquent sub-contractors and applied in reduction of their respective claims, if it were possible on the evidence submitted to make such an apportionment.

The Capitol City Lumber Co. vs. Charles Sudarsky (Connecticut), 95 *Conn.* 336.

* * *

A WORKMAN who is subject to the will and control of another with respect to the manner and means and method of doing his work is an "employee" of the other man within the meaning of the Workmen's Compensation Law of Connecticut. If, however, the workman has the right to use his own means and methods and is responsible only for the result of his undertaking, then he is an "independent contractor" under this Law, as distinguished from an "employee."

Aisenberg vs. Adams Co., 95 *Conn.* 419.

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DEPARTMENT OF SPECIFICATIONS

FOUNDATIONS (*Continued*)

PILES

IN those cases where it appears necessary to use piles certain preliminary information must be obtained by the engineer responsible for the structural design of the foundations. One matter that must be given the attention of the specification writer is that of the nature of the soil and another is whether test piles have been driven and, from the information obtained, what assumptions have been made. These factors control the selection of the kind of piles and the specifications for driving them.

Ordinarily these matters have been determined when the specification writer gives the problem his attention, yet he should know of the controlling factors in order that illogical clauses will not appear in his specifications.

Piles may be either of wood or concrete. If of wood they may be driven with the butt down or, as is usually the case, with the tip down. It is rare that architects will encounter soils which are of such a nature that they require piles to be driven with the butt down in order to prevent their raising after being driven and therefore cases of this kind will not be considered. If piles are to be of concrete they may be cast in place or pre-cast and driven with a pile driver similar to the method of driving wood piles. Piles of wood or concrete may be driven to bed rock, in which case they will act as columns, or they may be driven until further penetration is almost impossible, in which case they assume true pile action. The specification writer should know just which piles are to be used and what function, as foundation supports, they will perform.

The following woods usually are used for piles: Douglas fir, spruce, cypress, Western cedar, Eastern white or red cedar, tamarack, longleaf pine, chestnut, redwood, white oak, burr oak or post oak. Douglas fir is obtainable in long lengths and is one of the most used woods for piles. Oak is rarely desirable for piles because of their weight and crookedness although, if they are available and length requirements do not exceed twenty or twenty-five feet, there is no objection to their use.

Wood piles should be cut when the sap is down, from sound, live trees and should be close-grained, free of ring shakes, large and unsound or loose knots and decay. Peeling of piles must be done soon after they are cut. In other words, only wood of the very best quality should be used for piles and the specifications must be quite explicit as to inspection and rejection methods. The piles should have a uniform taper from butt to tip and a line drawn from center of butt to center of tip should, (a) lie within the body of the pile or, (b) if it passes beyond the pile the distance from this line to edge of pile should not be greater than one-eighth of the mean diameter. Short bends are not permissible and long bends are controlled by the line measurements given in the preceding sentence.

The diameter of the tip rarely should be less than six inches and of the butt not less than ten inches. These sizes are determined by the engineering design in most cases, but it is well to establish certain minimum sizes, whether they are smaller or greater than mentioned above. The length of wood piles for building construction usually ranges from twenty to forty feet and, since this item is of interest to contractors, some mention of lengths, minimum and maximum, should be made.

Chemical preservation of wood piles should be given some consideration, even though piles that are constantly under water have been known to last hundreds of years. It is customary, in building work, to neglect this point and, in the majority of cases, neglect would not be particularly harmful, yet it will do no harm for the specification writer to be posted on this subject. Where piles are to be used in salt water locations or in soil that has fluctuating ground water levels, and it is desirable to have the piles extend above the average low water level, preservation of some kind must be considered.

The usual chemical preservative is a creosote oil, the character of which must be considered for each case. The piles that are to be impregnated with the preservative must be of good quality, that is totally free from decay or other defects of any kind. There must be a sufficient thickness of sap wood to insure the proper absorption of oil to accomplish desired results. As no general rules, other than the above, can be laid down the reader is referred to the Proceedings of the American Wood Preservers' Association and to bulletins issued by the United States Forestry Service, in which there will be found interesting discussions of this subject. The specification writer need only remember that chemical preservation is of benefit at times and should be considered when writing specifications.

Mechanical protection of piles is of advantage, at times, especially when chemical preservation is expensive and where metal plates can be applied to the vulnerable points with ease and in an inexpensive manner. This subject has been considered in bulletins issued by the United States Forestry Service, to which reference should be

made for detailed information. These devices are, however, rarely used in building work.

Unless wood piles are to be driven in soft ground, where square tips are not objectionable, the tips should be provided with cast iron or steel shoes of conical shape, to facilitate penetration or else the wood tips themselves should be pointed. Metal shoes are desirable, especially in soil that is hard, such as clay or gravel. The necessity for shoes will be indicated by the results of test borings or by previous pile driving experiences in the immediate vicinity.

In practically all cases the butts should have steel bar rings fitted in place to assist in preventing brooming under blows of the hammer. The usual size is three-quarters of an inch thick by four or more inches wide. Inasmuch as brooming of the butts reduces the efficiency of the hammer the rings always should be used.

The shoes and rings should be fitted in place neatly and adjusted correctly in relation to the axis of the pile. It is particularly necessary to require that the shoes be fastened securely, otherwise their use will introduce complications more harmful than if they had been omitted. In all cases, the tips and butts should be cut square or at right angles to the axis.

WOOD piles may be driven by gravity hammer, usually called drop-hammer or by the steam-hammer. General consensus indicates a preference for the steam-hammer because of the lesser difficulty in all phases of driving work. Whether or not the specification should restrict the driving to a particular type of hammer depends on local conditions and available plants. In the final analysis the piles must be driven in a satisfactory manner, regardless of the particular method used to accomplish this result, and in most cases the choice of methods should be left to the contractor.

The specifications must require that the butt of the pile be struck over the entire surface by the hammer, for if the hammer is too small it will deliver the blow on an area smaller than that of the butt and cause the pile to split. Piles must be driven straight (unless they are batter piles, which are not often encountered in architectural work) and piles that change their position after driving has commenced must be withdrawn.

At times piles are driven by means of a water jet but as this method should not be used in cities it is unlikely an architect will have need to specify this method.

All broomed butts must be cut off. the butt ring removed and replaced and driving continued. Piles should be sunk at a uniform rate in order to minimize brooming or splitting at butt or tip. Further than requirements such as these the specification writer will find it best simply to depend on results and permit the contractor to accomplish them in the best way possible.

It is, however, quite important to be rather explicit in specifying the termination of pile driving. Good piles can be spoiled very easily by too much driving as they reach final depth and some persons believe several final blows, after desired resistance has been obtained, will secure extra resistance or additional bearing capacity. As a rule this is not so; it is only true when driving has been done improperly and final resistance has not been obtained. It is necessary therefore, to specify some standard or rule to determine the time when driving should be stopped. One specification reads as follows:

> "For drop-hammer; piles shall be driven to such depth that the last five blows of a three thousand pound hammer, freely falling fifteen feet upon a solid, unbroomed head, shall not produce an average penetration per blow of more than one-half inch.
>
> For steam hammer; the following formula shall be used,
>
> S = WH/30,000—0.1 average for each of last twenty blows.
>
> S = Penetration
>
> W = Weight of hammer in pounds
>
> H = Height of fall in feet."

The piles, after being driven, must be cut off at the proper height to receive foundations. The cut-off should be made below the lowest level of ground water and, if there be fluctuations in this level, proper consideration must be given this fact in order that one may be assured that piles will be wholly in earth that is constantly moist. If concrete capping is to be used the piles should be cut off only approximately at the correct level, as preciseness is not essential. If wood grillage or stone capping is to be used it is, of course, necessary to make the cut-off at exact levels. If piles have been treated with preservative oil the cut-off must be given very thorough brush coats to assure proper protection.

It is often desirable and sometimes necessary, to apply test loads on piles to give assurance that they are capable of sustaining the designed loads. Unless otherwise required, such as where building laws require tests of a certain form, the tests should be made on at least two groups of piles at diagonal corners of the foundation. The nature of the test proceedings should be determined by the designer of the foundations and the only function of the specification writer is to make sure that tests either are, or are not, wanted.

In soliciting bids for pile foundations the specification writer should call for bids per linear foot of driven pile that is driven in an acceptable manner. The approximate number of piles should be given and the probable number of piles in each of the various individual foundations.

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Concrete Piles

IF concrete piles have been selected it is quite probable that one of the small group of patented piles now available will have been selected for use. In such case a detailed specification would be somewhat absurd as it is not likely that the selected contractor would consider it unless it were a part of his own suggested specification. If, however, it has been decided that bids will be solicited on the basis of a contractor providing a sufficient number of properly driven piles to support the designated footing loads it becomes necessary to prepare general specifications covering the conditions that must be considered in the preparation of the estimates for the several different kinds of concrete piles.

Concrete piles may be of two types, viz., precast or cast in place, and if one of these types is not acceptable to the architect it should be so stated in the specifications. Judgment as to the use of one or the other type must be based on purely engineering considerations and the characteristics of the soil and, of course, properly do not come within the scope of the specifications. If bidders are to be permitted to select the type of pile they should be informed of the geological nature of the soil, water levels, and, if the information given is based on test borings or on general knowledge and belief, resulting from previous experiences in the vicinity.

The specifications should cover the use of reinforcing steel if reinforcement is deemed necessary by the contractor. The specifications for reinforcement should be similar to those for general concrete reinforcement, which will be discussed in a later paper. The mix of the concrete and the placing of it are, in general, no different from that required for other work of a similar character (concrete columns), all of which will be the subject of subsequent discussions.

If test piles are to be driven before general placing of piles is commenced, or if all piles are to be driven, with test loads placed on certain selected piles, or groups of piles, such requirements also must be given in the specifications.

The specification writer should become familiar with concrete and wood pile construction through studying several of the available text books of value and, if convenient, he will do well to attempt the study of field work whenever possible. As piles are the foundation work it is quite necessary that they be used under the guidance of those who are, at least, somewhat familiar with the requirements that must be met. The reader must bear in mind that discussions in this department have to do only with specifications and engineering phases are not within its province, except as they control directly the work under discussion.

Other forms of piles, such as disk and screw piles, are encountered occasionally in marine engineering work but rarely ever in building construction. Sand piles have been used to compact or solidify soils on which broad foundations are to be laid. Since sand piles are not resorted to in architectural practice there seems to be no need of entering into a discussion of specifications for them here. This applies also to the disk and screw piles.

(*To be Continued*)

REVIEW OF RECENT ARCHITECTURAL MAGAZINES

BY EGERTON SWARTWOUT, F.A.I.A.

THE *Journal of the American Institute of Architects* is, as the name implies, an official publication. It is, or it should be, an authoritative medium for the dissemination of matters of interest to the architectural profession and for the publication of technical articles of educational or historical value. It could, and should, occupy a position comparable to that of the official publications in the professions of Law and Medicine. It must then be somewhat of a shock to the laymind, or to any mind for that matter, to find prominently featured castles in Spain, etchings of dancers, moving picture films in the most ultra cubistic manner, all thinly spread on a background of pessimistic socialism. To be sure the castles in Spain may have a certain educational value as illustrations of contemporary architecture. But there are other strings to the bow; in fact a pleasant indoor pastime, more uncertain than put-and-take, is the generally futile effort to anticipate just what the little group of earnest thinkers will do next. For Example, we find in the December issue a column quotation from the Manchester Guardian, the beginning of which would lead the casual reader to infer it was something about G. K. Chesterton and about architecture; but it proves to be very little of Chesterton and still less of architecture and chiefly an adjuration to sing "Ho Ro, my nut brown maiden." It seems a rather silly sort of thing to sing to any maiden whatever her complexion, but still it is innocuous, which most of the quotations from the Manchester Guardian are not, so by all means let us sing Ho, Ro, and be thankful that the quotations were not from the Izvestia of Moscow or the New York Call. Also in the Bucolic style is an article on Thatch in Over, Middle and Nether Wallop and elsewhere, the quaint illustrations of which were probably secured from the little packets of pictures which were fastened somehow beneath slabs of ground glass and labourously copied by little Victorian art lovers. In quite a different key are the etchings of William Walcot, five of which are published in this number. However they may be questioned as restorations, they are wonderfully pictorial and give a reasonably vivid, if exaggerated, impression of classic days. A pageant or a stage setting from the hands of Mr. Walcot would be worth going miles to see, and I don't doubt he could design a group of exposition buildings that for utter magnificence would put all other expositions in the shade.

From "The Architectural Record"

Stairway, Independence Hall, Philadelphia (1750)

R. Clipston Sturgis has an interesting contribution to the ever discussed question of professional charges on the cost plus basis, but the gist of the whole matter seems to be that there can be no agreement as to the best method. No two offices do exactly the same class of work and none do it in exactly the same way. If a principal does little of his own work, any fee or salary in his case would of necessity be quite different from that in the case of a man who did much. The flat percentage rate has doubtless many disadvantages and is often unfair to the architect and occasionally to the owner, but it is probably true that it will be generally found the most adaptable to the profession as a whole. In public work it is the only safe method.

The Architectural Record, November: In this number is featured the work of William Lawrence Bottomley, Part I, that is to say the article by Arthur Willis Colton has a great deal to say of Mr. Bottomley, his ideals, his work and his method of doing it, but has very little to say of the ideals, etc., of Lawrence Peck, Edwards Hewitt and E. C. Dean, the gentlemen who seem to have been at least equally with Mr. Bottomley responsible for the work therein illustrated. It is true that the concluding paragraph of the article makes a brief reference to these gentlemen but the whole tenor of the article and the unusual absence of the architects' names below the illustrations would easily lead to the inference that Mr. Bottomley was solely responsible for the design. Now in some instances this is not only permissible but just. Some of the work done by McKim, Mead and White is quite properly attributed to Mr. McKim, and it was generally understood that the work done in the office of Daniel H. Burnham was not all by Mr. Burnham, and these examples might be multiplied, but in the present instance there does not seem to be any justification to warrant such a distinction. Mr. Bottomley, I fancy, would be the last one to claim that there was. The whole thing is most unfortunate; unfortunate for Messrs. Peck, Hewitt and Dean in that they have been denied what is due them, and unfortunate for Mr. Bottomley in that he has, unwittingly of course, been placed in a false position.

The Plainfield Municipal Building, which is a poor name, by the way, for a town building, is cumber-

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some and has a certain smugness about it that seems out of place; Town Hall would be better if it only had a hall to warrant the title; the Plainfield Municipal Building, then, has already had most favorable criticism in a former review. It is a very unusual and distinguished building and is another instance of the good results of a competition properly conducted. The Turtle Bay development is a good idea and well done. The two photographs that are published do not give a very comprehensive idea of what it's all about, but it has been very fully illustrated elsewhere. The Port Chester High School is hardly as successful. It is a very difficult proposition

From "The Architectural Forum"

Entrance Portico

Smith Memorial Hall, University of Illinois, Urbana, Ill.

James M. White, Architect G. E. Wright, Associate Architect

to design a building that is all glass one minute and all wall the next, and there are very few solutions that have been found. In the present building the contrast between the brick and the white trimmings is a little violent and disturbing, and the building looks a little new and hard in spite of the good detail, but newness is a defect that soon wears off in a Public School and doubtless by this time it looks as if it had been built ten years ago.

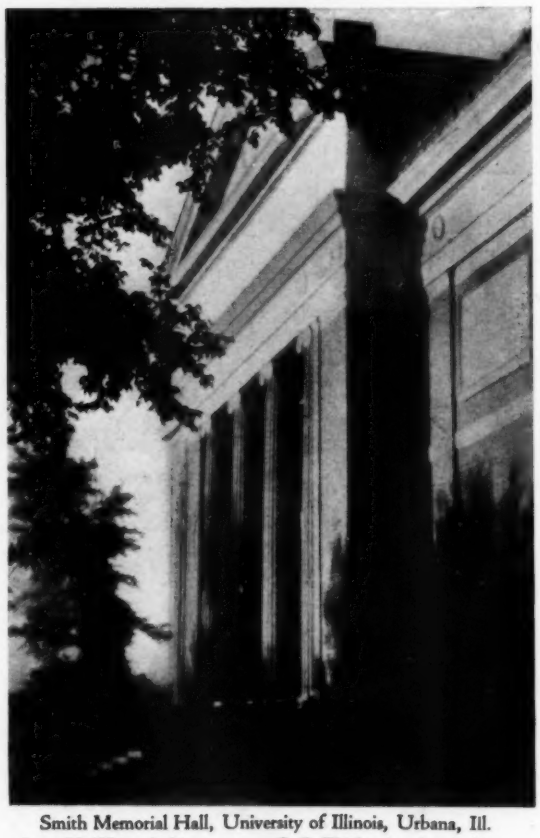
Frank Chouteau Brown continues his articles on the Tendencies in Apartment House Design. The plan of one of the apartments illustrated in Walton Place, Chicago, is novel and seems to have interesting possibilities but nothing was gained by reproducing the elevation.

In the Portfolio of Current Architecture there is a very charming stair in a house in East 54th Street by William F. Dominick and some interesting interiors. The screen in the Dining Room, though excellent in itself is a peculiar feature which is hard to judge in a photograph, but the house must be extremely attractive in the interior.

A. Lawrence Kocher has another article on the Early Architecture of Pennsylvania. These are very valuable contributions to the literature of Architecture, and should be, and probably will be published in book form. One of the illustrations is a most unusual view of the stairway in Independence Hall and is here reproduced.

Mr. Charles H. Moore writes of University Instruction in Architecture. That there should be some sort of universal instruction in the Fine Arts everyone will agree, but who is to say how it shall be given. In the old days, and not so long ago, either, every educated gentleman prided himself on his knowledge of architecture,—he travelled, he collected drawings, he appreciated what was good, or pretended to if he did not, and even practiced in a dillitante sort of way. It was the right thing to do; it was the fashion, and it seems to me, that is crux of the whole matter. Can the appreciation of the Fine Arts be made fashionable or the proper thing, or rather can it be made popular? Possibly; but not by photographs, no matter how carefully they are mounted or cross indexed as Mr. Moore suggests; not by forcing upon the torpid minds of an uninterested class that all the styles naturally fall into three catagories, the trabeated the buttressed arch and so forth as Mr. Moore also suggests; nor by trying to tell a class of husky youths that the Greek Acanthus is more pointed than the Roman when their minds are entirely occupied in speculating whether or not Babe Ruth will make another home run. If it can be done, it will be done by the personality of the man who does it. If the instructor is popular, if he can talk well and hold the attention of his hearers, if he can make the thing interesting, and if

From "The Architectural Forum"



Smith Memorial Hall, University of Illinois, Urbana, Ill.

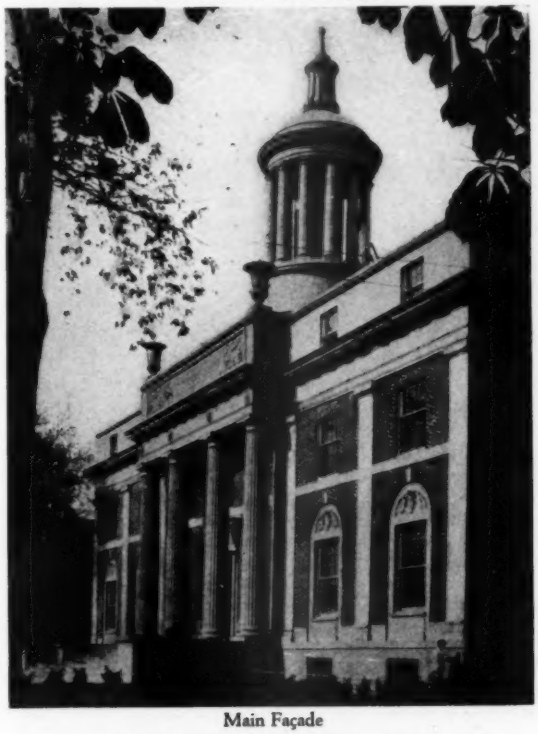
James M. White, Architect G. E. Wright, Associate Architect

above all he has a saving sense of humor, those who take the course will come to like it and may possibly remember a little of what they have heard. Of course I am now speaking of the general run of students and not of those few earnest souls who take their art with a capital A. The difficulty would seem to be to get students to take the course, presupposing naturally that such courses are elective. In my own day nearly the whole class took Political Economy, not because they were the least interested in that subject but because Billy Sumner was a personality. We all took History of Modern Europe because Professor Adams made it one of the few really interesting courses in the University, and there were some that took Botany because it was a snap. Which shall it be, personality or a snap course? And then again it might be made compulsory,—I don't see why not. In New Haven we had to take Philosophy, two years of it, and were taught that the thinghood of a thing was not an extended somewhat, and other equally amazing facts; *Cogito ergo sum, etc.* Now I can't but feel if we put in the hours of those two years in learning something of Architecture and the Fine Arts in general we would have been much better off. But we are getting far away from Mr. Moore's article which gives somewhat in detail his idea of what could be taught in a University. It seems to me, if I could criticize such an eminent authority, that what he says is quite over the heads of the average class. Possibly when spoken in lectures and explained by photographs it might not be, but as a rule the professional talks way over the heads of those who listen and look wise and say "Yes, yes, of course." In common parlance they don't get it, but they don't want to confess that fact. I don't think the average student would understand or remember the three general categories mentioned by Mr. Moore; I don't think the structural truths that are really so fundamental would interest him at all; nor the points of detail. He would be interested in the history of the countries as expressed and echoed in their art; how they lived and what they did and why they built as they did; and what a Greek temple really looked like; the color, the life; how climatic influences effect the design; the wars that were fought and what their influence was; the spirit behind the great cathedrals; in other words, the history of civilization. I don't think you can teach architecture, or an appreciation of architecture, by looking at photographs of ruined buildings any more than you can give a boy an idea of Rome by teaching him Latin. Some of Walcot's drawings and paintings, for example, unauthoritative as some of them

From "The Journal of the A. I. A."

Boat Lane—Welford-on-Avon

From "The Architectural Record"



Main Façade

Municipal Building, Plainfield, New Jersey

W. L. Bottomley, Architect

From "Architecture"

Details, Residence, Mr. and Mrs. Sidney Homer (Louise Homer), Lake George, N. Y.

Edward S. Hewitt, Architect

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are, would give a much more lasting impression of what Rome was like than half a hundred photographs of the ruins or restorations of them. We are too often accustomed merely to rattle the dry bones and think we see flesh and blood. I remember a day spent in the Roman Forum, or what remains of it, with the late Jesse Benedict Carter. In those few hours I learned more about what the Forum really was than I had ever learnt from all the books and photographs I had studied for years. The Architecture of the Past was once an architecture of a present, and if we are to conceive of it at all we must conceive of it as it was when it was.

The Architectural Forum, November: A Corinthian order is not necessarily a good order, because it was built in Rome some nineteen centuries ago nor is a Doric temple necessarily of pleasing proportion because it was built in Greece, and similarly not all the work done in Italy during the Renaissance was worth making a fuss about. A case in point is the Villa Cornaro which is fussed about considerably in the fourth installment of the Villas of the Veneto and which is called a *magnum opus* of Palladio. "Scamozzi" says the article "properly deemed this one of Palladio's most beautiful creations." If Scamozzi really said this, or if he really thought it, which is more to the point, his admiration for Palladio ran away with his judgment. As a composition it is bad; a high square boxlike structure with two narrow lateral wings that from the side are extremely ugly; a superimposed portico, badly proportioned and awkwardly constructed, this portico not really being a portico at all, for the end columns are engaged and form the termination of thin wing walls which are the sides of the portico and which are pierced by tall stilted arches. There is an isolated gateway which seems to serve no particular purpose, and another in the rear filled with iron work of the XVII century which seems complicated and shapeless, although in the article it is called "an achievement in wrought iron of such beauty that it somewhat inclines us to forgive the contemporary frescoes just alluded to." The frescoes are not illustrated, but if compared to them the iron work shines as an achievement the omission was considerate.

From "The Architectural Record"

Main Stair—Residence of Bayard Dominick, Esq., 115-117 East Fifty-Fourth Street, New York City

William F. Dominick, Architect

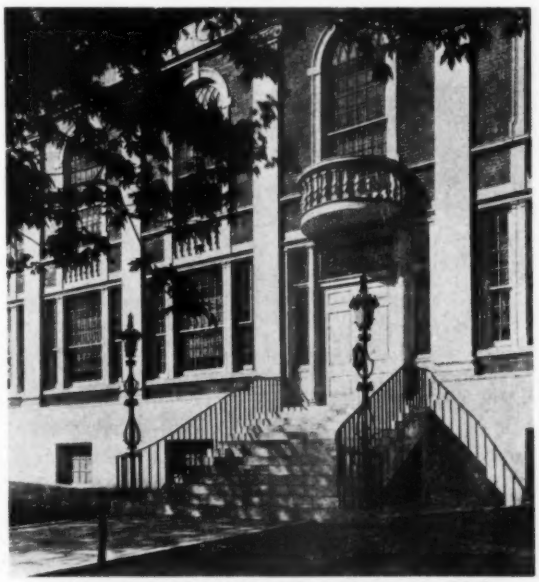
Harold F. Blanchard has an article on Ramp Design in Public Garages, an apparently practical solution of a modern problem. Smith Memorial Hall, a building for a School of Music at the University of Illinois is described at length and profusely illustrated. The illustrations are excellent examples of the value of good photography. The frontispiece, which is a view of the portico in sharp perspective, is a charming arrangement of light and shade, while another view from almost exactly the same relative point is bald and uninteresting. Exhibitors in our next Architectural exhibition will do well to note these two carefully. A good decorative tree and effective shadows will do much, particularly if enlarged almost to life size and printed in sepia; in fact a casual visitor to some of our exhibitions might imagine he had lost his way and was in the forestry exhibit. A great deal of care was taken in the construction of this building to make it soundproof. F. R. Watson, Professor of Experimental Physics writes at length on this subject. He is very frank in his conclusions and what he says is well worth preserving for reference.—The Essex County Tuberculosis Hospital is probably practical, in fact Mr. Reuben H. Dockham, who writes about it, is quite sure on the point, but architecturally it is no better nor worse than most such buildings.—Kilham, Hopkins and Greeley have a Recreation Building at New Holland, Georgia, the entrance front of which is very interesting and would be better if the octagonal porches on the end were not so insistent. A view more directly in front would show it to better advantage.

Peabody, Wilson & Brown show a picturesque house in Roslyn, Long Island, the general view of which is marred by a singular looking rectangle in the grass surrounded by little Christmas trees. It may be the house was designed on the Hambidge theory and this is a lasting record of how it was done.—Alfred Hopkins' farm buildings are always a joy. There are few who handle small work with the ease and charm that he does. The superintendent's cottage in this number is not one of his best, but is very simple and pleasing. Stanley Parker has a bully little house at Belmont, Mass. It is a house one could live in year after year and not get tired of, whereas the tenure of life in a picturesque house may be a question of days.—Under the general heading of Straight Talks with Architects, C. Stanley Taylor asks whether you will get your share? Apparently you won't, according to Mr. Taylor, unless you sell your plans as you would patent medicine or soap,—and as an instance of how to do it he tells of a prominent firm of architects filing plans for a large office building; shortly afterwards a new set of plans was filed by a younger architect and on inquiry it developed that the cost of the building according to the first plans was too much, and the younger architect, learning this, made a study of the plans as filed and revised them with the aid of a building manager and went with his plans to the hard headed business men who were in charge of the operation and annexed the job. Keen business acumen no doubt! and quite as well done as the soap man or the patent medicine salesman could do it.

Of what importance is a little matter of ethics when you are after your share or somebody else's? Decidedly these straight talks to architects are interesting, but the

adjective seems ill chosen. Now this is not a diatribe against efficiency or practical knowledge. If an architect, or a firm of architects, accept a commission to design a large commercial proposition it is their duty to exercise as much care in the study of the practical problems as they do in the study of the architecture, but there is no excuse for one professional man stealing the work of another. Of course, if the client was dissatisfied and severed all connections with the first firm and paid them for their services he was quite justified in going elsewhere and the younger architect was quite justified in taking the work; but this does not seem to have been the case here. The average client goes only to a distinguished surgeon when he has to undergo a serious operation, and if enmeshed in the toils of the law, he consults a lawyer who has made a specialty of cases of that kind, and he usually goes very carefully into the ability and financial standing of his builder, but he selects his architect because his wife's cousin had a nephew who once knew John Smith an architect, who, for example, has only done country houses. They are very good country houses to be sure, but John Smith does not thereby qualify as an architect to do a large monumental building nor a large commercial one either. In all great eras in building the architect comes into his own, that is, the good architect does. The distinguished architects of the past did not get their reputation because of the size of their office force nor their ability to get work. The work came to them because of their talent and let it be remarked this talent was personal. The architect was really an architect, a designer, a master builder. The future of architecture here depends on the recognition of the architect by the client and by the public at large. If the client seeks he will find, but if he gives no thought to his selection, he can only blame himself if the results are barren.

From "The Architectural Record"



Entrance Steps—High School, Port Chester, New York

Architecture, November: In the opening article Mr. Ralph Fanning describes and illustrates the church towers of the Meuse. It is an interesting subject and makes one wish that the illustrations as well as the text were more fully developed. Dwight James Baum has some good pictures of Plymouth, and the Grace Dodge Hotel or Hostel, as the panel over the door has it, is shown somewhat in detail, and is a plain square sort of building with nothing about it to attract special attention but the two enormous doors which run up unmeaningly through the two lower stories. Edward S. Hewitt shows a house at Lake George, a simple comfortable sort of house in a charmingly natural setting; the wing with the enclosed porch is very good and would be better if the gable windows were a little smaller or differently shaped. A good feature of the house is the way it hugs the ground, the floor being only a few inches above the grade. Most houses are ruined by being stuck up in the air entirely unnecessarily. Old Lyme, an artists' colony, has built a Memorial Hall and publishes it in this issue. A more careful study of the many available examples of New England colonial work would have produced better results. Clinton Mackenzie's office is a clever utilization of the upper part of an old building, but it would be interesting to know just what happens on the other side of that large fireplace in the niche which balances the small grate; an ornamental oil stove perhaps, or some secret receptacle for the storage of—well, what every architect keeps in the safe nowadays. It's about all there is to put in the safe anyway. Mr. Jay Hambidge has a short article on Dynamic Symmetry and Modern Architecture. He says that he might say that architecture today is almost without proportion and that very few designers today know that the base of design is a certain element of formality which depends on symmetry, and that symmetry must be present before design can exist and further that the designer "may perform all the operations necessary with a string held in the two hands."—We have all heard of things being so easy that they could be done with one hand tied behind your back, but Mr. Hambidge goes this considerably better. While Mr. Harding is scrapping the navy Mr. Hambidge scraps the T squares. It is rumored that Schrell and Brock and Eugene Dietzgen are quite bitter in their denunciation of this theory. But in the article itself there is nothing new, nothing that Mr. Hambidge has not said before, nothing but a reiteration that Greek design is the best and the Greeks used this method and therefore, etc. There is no proof, no definite statement, no examples of anything accomplished. In the text there is reproduced what Mr. Hambidge says in a hitherto unpublished drawing by Michelangelo. It is a plan of a rotunda, a church, or possibly a tomb, the only unusual thing about it being eight pairs of coupled columns or piers in a circle within the dome and a sort of square box in the center. It might be a crypt under a dome, somewhat like Napoleon's tomb. The mysterious lines mentioned in the article are only the 45° lines by which the sketch was laid out. Mr. Hambidge could see thousands such in any architect's office, without going to Florence to find them. There are also some fragmentary sketches of Leonardo da Vinci, which also show guide lines and some notes made by a certain Villard de Honnecourt; and a sketch plan which the article says is the Cathedral at Laon, and that this "is a rendering of the symmetry theme of the building" and that this sketch was all the architect needed to "at any time and to any extent reconstruct the original." Now if any man could reconstruct Laon Cathedral or any Cathedral, or any thing at all from such a fragment as this he should give up architecture and seek a position as a restorer of fossil dinosaurs at the Museum of Natural History. The plan is apparently the plan of an octagonal tower with buttress surmounted by columns and with deep set arches with columnar reveals between the buttresses. It might mean something to Villard but it means nothing to anyone else and there is no symmetry theme about it. After the masterful exposition of the real thing by Mr. Kane in a late issue of THE AMERICAN ARCHITECT AND ARCHITECTURAL REVIEW, why lug in Michelangelo and Leonardo?

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DEPARTMENT OF ARCHITECTURAL ENGINEERING

THE PLANNING OF AUTOMOBILE SERVICE STATIONS

Illustrated by the Long Island City Service Station of the White Company

By WILBUR J. WATSON, M. Am. Soc. C. E.*

THE general requirements governing the design and construction of so-called "Service Stations," or local repair shops, for use in maintaining automobile trucks are as follows:

1. Large unobstructed floor areas to permit the direct ingress and egress of the largest size trucks. The standard five-ton truck, manufactured by the White Company, is about 7 ft. wide and 22 ft. long, with a turning radius of 30 feet.

2. Heavy capacity floors, capable of safely sustaining loaded trucks of the maximum size and capacity.

3. Ample light, utilizing natural light as much as possible.

4. Good ventilation, providing for the dilution and elimination of gases produced by the combustion of gasoline, and, in extreme cases, providing for mechanical removal of the heavy gases which accumulate near the floor.

Main Entrance of the White Company Service Station, Long Island City, N. Y.

5. The shop proper should be located on the main floor, eliminating elevators, and allowing maximum speed of ingress and egress.

6. A basement should be provided where practicable to provide storage space, mainly for new cars. The basement area is used mostly by the sales department for storage, assembly and distribution. It is therefore not properly a part of the shop.

7. The local sales offices of the company should be located on the mezzanine or second floor and be provided with a separate entrance.

8. The "Parts Department" should be provided with a separate entrance for customers. Here are made all sales of parts directly to the public and the supplying of parts to the shop. It should be separate and distinct from the departments for Local Sales and Repairs.

9. The Repair Department should be in four parts: the Inspection Room, the Shop proper, Machine Shop and Tool Room, and Blacksmith and Radiator Repair Shop.

10. The shop floors should be covered preferably with maple flooring, which furnishes a comfortable working surface and can be kept cleaner than any other type of wood floor.

11. To allow proper working space around each car with sufficient aisle space for rapid movement of cars the Shop proper should have clear spans of from 70 to 75 ft. between rows of columns.

12. The roof construction should be designed to give maximum light and ventilation at the center of the bay. The double saw-tooth type of roof has been found to be the most efficient for this purpose.

13. All divisions must be capable of expansion and the size of lot and design of structure must be such as to permit of ready expansion without

* *President, The Watson Engineering Company, Cleveland, Ohio.*

sacrifice of working efficiency.

14. Vertical clearances should be not less than 13 ft. through shop doors, 11 ft. throughout the storage area, and 14 ft. under the trusses for the shop.

15. Shop roof trusses should be figured to carry a load of at least 1,000 lbs. applied anywhere on the lower chords.

Inspection Room—The White Company Service Station

The foregoing cardinal principles of design call for large ground areas, which requirement makes it impracticable to locate such stations in congested districts. They are being built, therefore, several miles from the business center of the larger cities, it having been found that this is of only slight disadvantage. In general, a site

Basement—The White Company Service Station

is selected which is as near as practicable to the center of gravity of the area to be served and is at the same time, approachable by well paved streets and accessible to labor.

Building codes in large cities generally class service stations with garages and insist upon fire-resisting construction, with fire walls separating the offices and Parts Department from the shop, a sprinkler system being installed throughout.

The type of construction recommended by the writer, and used wherever permitted by building regulations, is of reinforced concrete fireproof construction of the beam and girder type for all parts of the office and parts sections with flat slab construction for the basement and main floor. In the Repair Shop are usually exposed structural steel columns and trusses, with timber purlins and two-inch wood sheathing, carrying a composition roofing. Walls are of brick, with factory steel sash for the shop, storage and parts departments and double hung steel or wood sash for all offices.

The sprinkler system, although required in most cities, would seem to be hardly needed, as very little combustible material comes into these stations, for most of it consists of wooden bodies and these are being fast displaced by steel and composition bodies. Furthermore, chemical extinguishers are much more effective than water in fighting fire and these stations are all thoroughly equipped with such extinguishers.

General Shop—The White Company Service Station

Description of Facilities

THE percentage of trucks undergoing repairs in any given territory, to the total number of trucks in use in that territory, varies greatly, but ten per cent. is in general assumed to be a fair average. In some localities practically all of this business would come to the service station of the company, while in others much of the work is done by owners of trucks who have their own shops. The number of trucks to be provided for is therefore governed by the experience of the local manager.

When a truck is in need of repairs it is driven, usually by its own power, into the Inspection Room of the Repair Shop through the truck entrance, which has a bi-fold or sliding door operated by compressed air. This door usually has a width and a height of 13 feet. Here an Order Clerk listens to the driver's description of his trouble and makes out an order for repairs. The machine is then driven to a designated part of the inspection room where it is carefully inspected

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by a workman. If the necessary repairs are slight and can be made in a few minutes' time the car is repaired immediately in the inspection room and is sent out without entering the shop proper. If the repairs are extensive enough to warrant putting the car in the main shop, the driver leaves the car and all loose equipment is taken from it and placed on a shelf in the Customers' Equipment Room, or "jail" as it is popularly termed. This is a separate enclosure in the inspection room equipped with metal shelves and enclosed in a wire grille. After stripping the car of loose equipment one of the workmen drives it into the shop where it is assigned space by the shop foreman.

The system of placing cars in the main shop requires that a passageway be maintained at the center of each 75 ft. span. The machines are then placed so that they head away from this aisle, in which case benches are located along the sides of the bays; or, the machines head towards the aisle and movable benches are used. A working space of not less than 4 ft. is provided for on all sides of each machine. This requires a floor space of not less than 11 ft. by 26 ft. for each five-ton truck.

Approximately over the center of the engine I-beams are attached to the trusses. These I-beams carry hand-operated hoists for lifting engines and parts off the chasses on to small hand trucks which are used to carry them to the machine shop or the "parts-cleaning vat," which is usually located in or near the blacksmith shop. A second line of I-beams is provided in one part of the shop for the purpose of lifting bodies off the chasses.

Electric current and compressed air outlets are provided at frequent intervals along the lines of benches for trouble lights, drills, pneumatic hammers, etc.

At the center of the main shop is a small office used by the shop foreman and by the requisition clerk. Pneumatic tubes connect this office with the parts department and the accounting room.

One machine needs new parts. At the request of the mechanic assigned to the job the requisition clerk makes out an order-slip for them and it is sent to the parts department. There a clerk places the articles on the delivery shelf between the shop and the parts department. Delivery boys on roller skates take it from the delivery bench to the mechanic who placed the order. If the part is too heavy or bulky to be delivered through the window, it is placed on a small hand truck and passed through a sliding door connecting the two departments.

Many parts are sold to customers who come for them and the percentage is so large that there are special counters for this purpose. Such customers have a special entrance where a stock record clerk determines from his card index whether the article wanted is in stock and its location. When the article is delivered to the customer the money, if it is a cash sale, is transmitted through a pneumatic tube to the cashier on the third floor. If it is a credit sale a slip is sent by tube to the credit man who approves the sale and returns the slip to the counter.

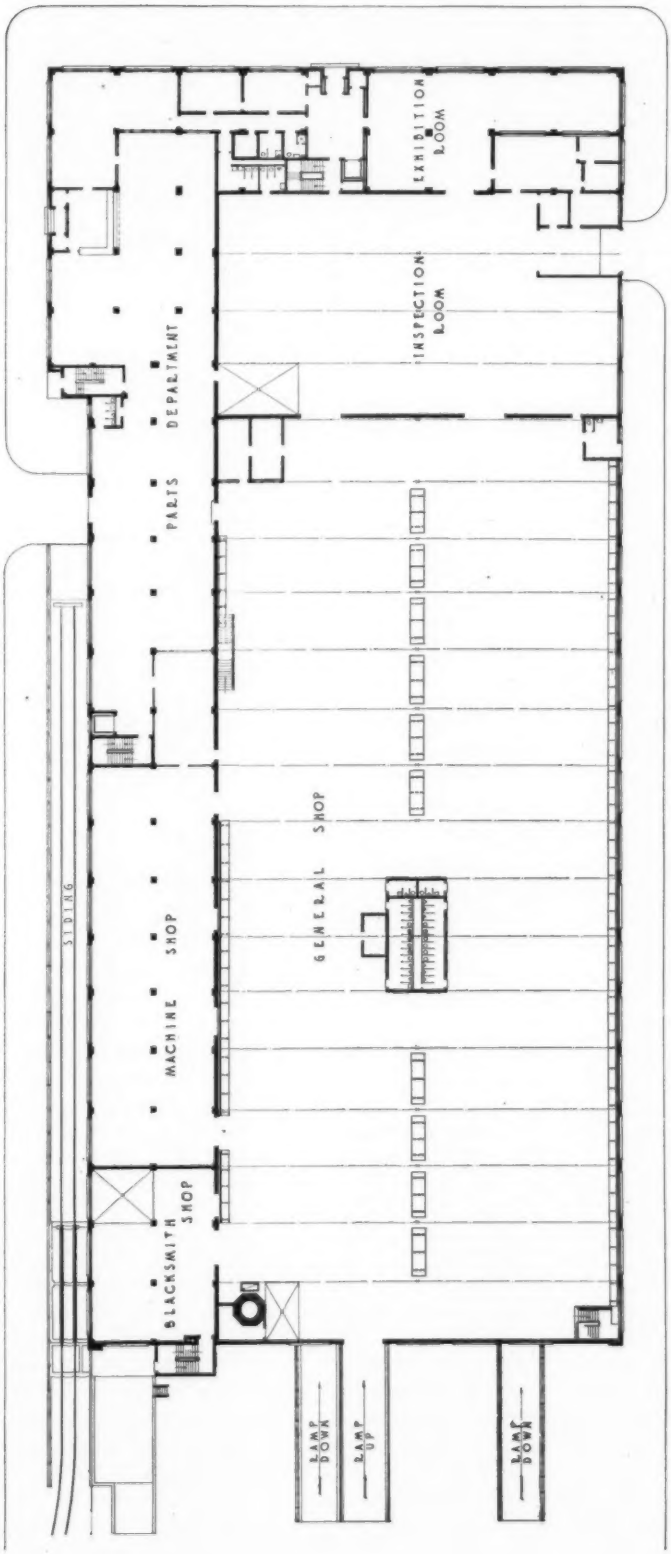
The White Company Service Station

THE service station for the White Company, Long Island City, New York, was designed and built in accordance with the principles described. It is in the Borough of Queens, about 2,000 feet east of Queensboro Bridge Plaza and about 1,000 feet from the Dutch Kills Canal. It occupies a block 600 ft. long by 200 ft. wide, the building being 440 ft. by 200 ft.

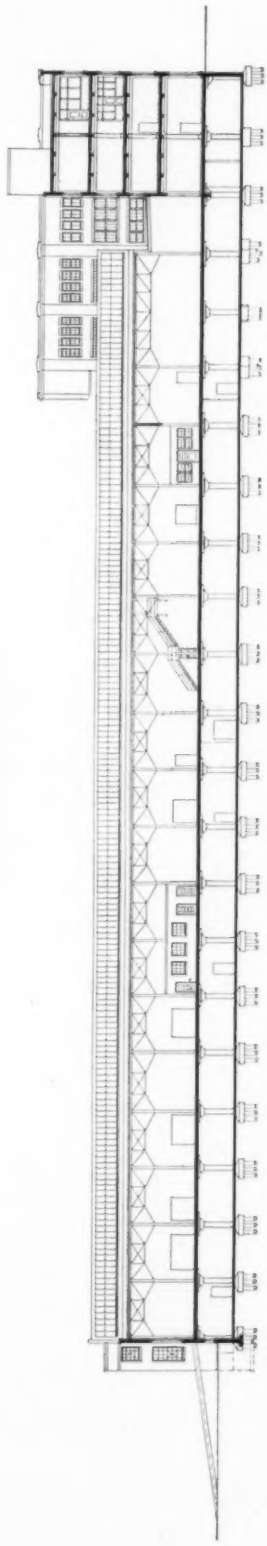
There are three distinct structural parts to the building: 1. The Office Section, having a basement and four stories, with provisions for adding a fifth story in the future. It is 45 ft. by 200 ft. on Thomson Avenue, with an angle about 55 ft. by 60 ft. along Mount Street. 2. The Parts Department, Machine Shop, Stock Rooms, etc., facing Mount Street, having a basement and two stories, the length of which is about 335 ft. and the width 44 ft. 3. The Shop proper, which has a basement and one story, the length being 395 ft., with a width of 150 ft. The first and second sections are of reinforced concrete beam and slab design. The third section has a reinforced concrete flat slab floor, exposed structural steel trusses and timber roofing.

The building site was formerly a marsh and the general level of the lot prior to starting construction was about seven feet below street grades. Wash borings and other tests made it seem best to use a rammed concrete pile having an expanded base or spread footing. Timber piles could not be used because of the probability of a decided lowering of the ground water level in the future. The boggy nature of the site made it advisable to neglect all possible frictional bearing value on the piles for the upper 22 feet of their length. Rock was found at depths varying from 33 feet to 59 feet below the bottom of the building foundations. It was decided to drive all piles to rock when possible and to have the least length of pile, when it was not practicable to drive to rock, 42 feet.

Two difficulties greater than were foreseen, developed in the driving of the piles. The driving proved to be much harder than anticipated, owing to the presence of a thin layer of cemented sand immediately underlying the mud. This also made the withdrawing of the cores difficult. A number of cores were broken and had to be left in the ground as they could not be withdrawn.

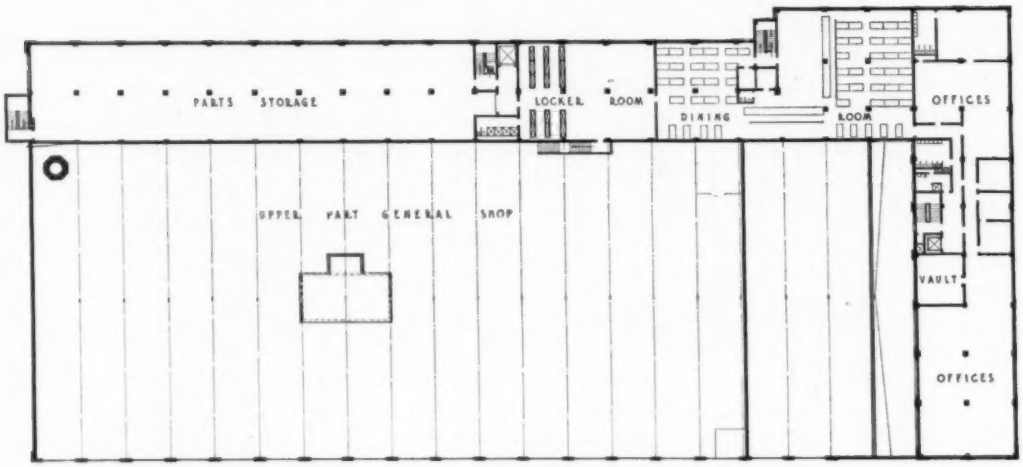


PLAN OF FIRST STORY



LONGITUDINAL SECTION

THE WHITE COMPANY SERVICE STATION—LONG ISLAND CITY, N. Y.



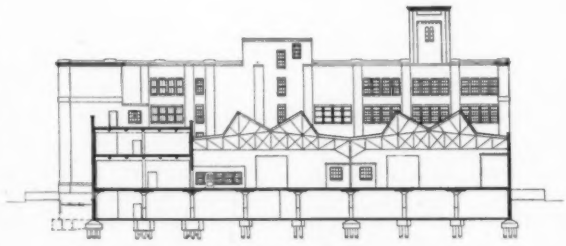
Plan of Second Story, The White Company Service Station

This thin layer of cemented sand was not indicated by the wash borings, a common defect of such borings. It had a thickness of from one to two feet and under it was soft sand into which the piles penetrated one inch per blow of the hammer.

The second difficulty was that the material overlying the mud, or bog, was more unstable than indicated by the borings. It was, in fact, so unstable that it was necessary to remove all excavated material and bring in material from outside the site for backfilling and, also, to reinforce the basement floor with metal.

All piles were figured to carry a load of 50 tons each and were driven to a penetration of four blows per inch, using a No. 1 Vulcan Hammer.

The nearest arm of the sea is about 1,000 feet distant and the ground water on the site stood about 10 feet above sea level, or from 3.5 feet to 5.5 feet above the sewer levels. The explanation of this phenomenon appears to be that the site lies on an old creek bed, flanked east and west by impervious strata and shut off on the north by the fill forming Thomson Avenue and the roadbed of the Long Island Railroad, all of which act as a dam to hold back the ground water. This water proved to be very troublesome during construction, requiring constant pumping and proving to be a large item of unforeseen expense.



Transverse Section, The White Company Service Station

The basement columns under the shop are of concrete reinforced with spiral-hooping. The spacing is 19 ft. 8½ in. by 23 ft. 4 in. They range in diameter from 19 in. to 24 in., with a 4 ft. head, carrying a drop slab 7 ft. 6 in. square. The flat slab has a thickness of 9 in. reinforced four ways in accordance with the standard practice of The Watson Engineering Company, which consists in using, in addition to the usual four bands of rods, continuous bands of rods in the center of the panels, located near the top of the slab on a line between columns; and in the lower part of the slab at the centers of the panels. The function of this secondary system of rods is to provide reinforcement against unbalanced loads, not properly taken care of by the simple four-way system.

The office section and parts section are of ordinary beam and slab construction with brick exterior facing and suspended ceilings.

The shop roof is carried on exposed steel trusses on 19 ft. 8½ in. centers, 75 ft. span, double saw-tooth type, providing a clearance of 17 ft. from the floor to the underside of the lower chords. These trusses are figured to carry a suspended load of one ton applied at any point on the lower chord, in addition to the roof loads specified. Trolley beams are attached on which are operated hoists to lift engines, etc., from chasses. Ten inch I-beams are used for purlins, supporting 2 in. wood sheathing covered with five-ply composition roofing. The original intention was to use wood purlins but steel was substituted at the request of the Borough authorities.

The basement floor is cement finish throughout. The main entrance has art tile floors. All floors in offices are ⅞ in. maple laid on sleepers bedded

in a carefully proportioned cinder concrete fill.

In the Inspection Room the floor is of cement finish. It was felt that the limited number of employees in this room made the use of wood flooring less necessary than in the shop as nearly all mud is removed from machines in the Inspection Room before entering the shop.

The shop floors throughout are of 1⅛ in. square edge, No. 1 Maple, laid on 2 in. pine sub-floor, which is bedded in 1 in. tar-rok. This floor has a light colored pleasing appearance, is comfortable for the men to walk on and is readily cleaned.

The elevator service consists of one passenger elevator 6 ft. by 6 ft. having a capacity of 3,000 lbs. and a speed of 300 ft. per minute, and one freight elevator in the Parts Department 7 ft. by 8 ft., with a capacity of 6,000 lbs. and a speed of 100 ft. per minute.

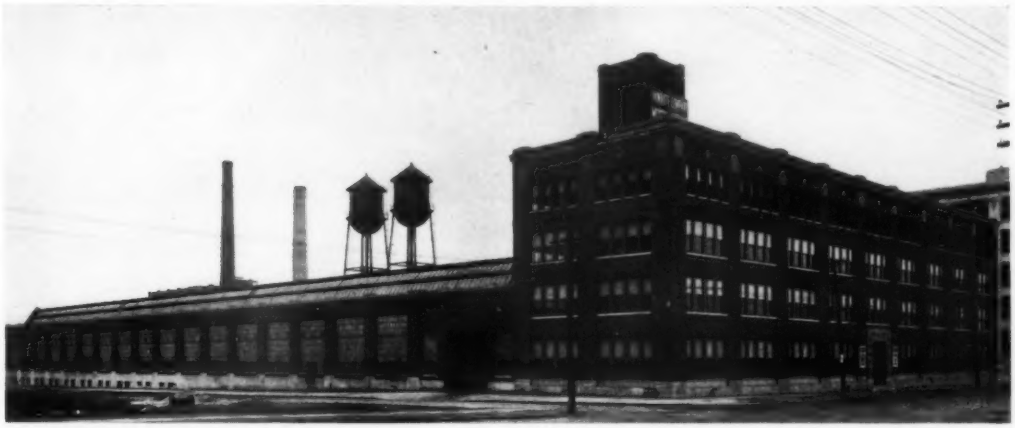
Heating is by direct steam radiation, two pipe vacuum system, providing 40,000 sq. ft. of radiation. The heating plant consisting of two boilers of about 150 H. P. capacity each, is designed at present to burn anthracite coal with provision for future use of oil. The building contains 52 water closets, 26 urinals, 7 slop sinks, 18 drinking fountains, 49 lavatories, 14 double wash sinks, 4 single wash sinks, 8 shower baths, 4 wash racks, 1 parts cleaning vat, kitchen fixtures, etc. All wash rack, cleaning vat and floor drainage is handled through oil separators in order that there may be perfect separation of oil, gasoline and water, as well as to prevent the entrance of gasoline and oil into the city sewers.

All electric wires are run in rigid metal conduit, embedded in the concrete or in the cinder floor fill wherever practicable. The switchboard is a five panel black slate board, 10 ft. long and about 8 ft. high, equipped with 12 breakers, I. T. E. "Autoite" type, total capacity 2,400 amp. for light and power, ranging from 100 to 300 amp. per breaker.

Power requirements consist of a total of approximately 150 connected horse power in about 15 separate motors for elevators, air compressors, sump pumps, boiler feed pumps, hot and cold water circulating systems, etc.

The office lighting is the usual ceiling type of direct illumination, using standard reflectors of opaque glass, the intensity being approximately one watt per square foot of floor area. Base receptacles are located about every twenty feet for desk illumination, or machine operation.

The shop lighting is the regular type for this work using enamelled reflectors. The lighting in the basement is about ¼ watt per sq. ft. of floor area. The basement is served with current for extension cords by means of plugs located in the columns about 4 ft. 6 in. above the floor. The lighting in the basement is figured on a basis of storage space and not shop work.



Front view of the White Company Service Station showing Main Entrance and Entrance to the Inspection Room

The Main Shop, Machine Shop, Stock Rooms, etc. are lighted in a similar manner to the basement with enamelled steel reflectors, the bottom edges of which are level with the lower chords of the trusses. The illumination is approximately ¾ watt per sq. ft. of floor area. The Main Shop is provided with outlets on every column and on the side walls opposite columns, at a height of about 4 ft. 6 in. above the floor.

The entire plant is also equipped with telephone conduits in order that wires may be pulled from the main telephone exchange on the fourth floor to any office or station in the shop.

The building is also equipped with a sprinkler system throughout; all sash are steel sash; mechanical ventilation throughout; pneumatic equipment with conduits to supply compressed air wherever needed for any required purpose; pneumatic tube system for transfer of papers from any office to any other office: gasoline storage tanks and pumps.

In the rear of the bulding are two reinforced

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Rear View of the White Company Service Station, Showing Switch Track and the Ramps to Main Shop Floor and Basement

concrete ramps leading into the basement and one timber ramp leading to the main shop floor. One of the basement ramps is used exclusively for used cars and garage purposes; the other is used exclusively for ingress and egress of new cars. The ramp to the main floor is to serve as an emergency exit. Leading from the street to these ramps are cinder driveways of temporary construction. All details are so made that extension of the building to the rear may readily be accomplished.

The building was started in July, 1919 and was completed in July, 1920. It was constructed by the White Company, Cleveland, Ohio, to house the New York offices of the company, the New York sales offices and the Foreign sales offices. The design and construction of the building were in charge of The Watson Engineering Company, Cleveland, Ohio, Engineers and Architects. There were 33 separate contractors engaged in the construction work.

FELLING A FACTORY CHIMNEY

THE City of New York in order to build new piers on Staten Island acquired the property of Messrs. I. T. Williams & Sons, Tompkinsville, on which stood a factory chimney of perforated radial brick erected by the Alphons Custodis Chimney Construction Company in 1908.

The chimney had a height of 125 ft. with an inside diameter at the top of 7 ft. The wall thickness at the top was 7½ in. and at the bottom was 20⅛ in. Being designed for high temperatures the interior lining, 4 in. in thickness, extended from the foundation to the top forming a 2 in. air space. To guard further against temperature effects bands of 3½ in. by 5/16 in. iron were placed around the outside at intervals of 6 ft. It required four weeks to erect the chimney which contained 37,000 radial brick blocks weighing 175 tons. The chimney stood upon a concrete foundation 6 ft. deep carried on 64 piles spaced 2 ft. 6 in. center to center. The foundation was built in five steps, the bottom one being 19 ft. square with a thickness of 2 ft. The thickness of each of the upper four steps was one foot, the top step being 14 ft. square.

The builders of the chimney took the contract to raze it for the city. Fortunately it was possible to do this *en bloc,* instead of demolishing the

brickwork by starting at the top and removing it in small sections, an expensive and time-consuming process. There was vacant ground on which the chimney could lie at full length and be taken to pieces at leisure. Plans were prepared to cause it to fall in a line which would take it near one of the buildings the corner of which was taken off to guard against any possibility of it being struck by the chimney while falling. The building was one of several to be removed for the proposed improvement so taking the corner off before felling the chimney was a precautionary measure taken as a matter of expediency merely because it was possible to do so at no increase of cost. When the chimney fell it did not touch the building but occupied the exact line selected in advance. Within 40 ft. of the chimney was a city pier, the building wall being nearly all glass, of which not a pane was broken.

Two days before the chimney was felled two men began to cut away the brickwork from the top of the concrete foundation to a height of 5 ft. A section 8 in. wide was first cut through one wall at a point on a line indicating the direction in which the chimney was to fall. When the wall was cut through an 8 in. by 8 in. yellow pine post was inserted in the hole and tightly wedged in place. About 5 feet on either side of this post two others were set in the same manner after which the brick wall between the posts was removed. The removal of the brick wall was continued away from the two outside posts until 55 per cent of the circumference was removed. The chimney then had a clear opening at the bottom 5 ft. in height and extending through an arc of 198 degrees, supported on three yellow pine posts. The middle post was then saturated with kerosene, firewood saturated with kerosene was piled around it and the other two posts were removed.

The work started on Monday morning Nov. 21 and at 2:55 P. M. on Wednesday a fire was started. At 3:50 the chimney started to fall. It went down as a unit until the top was about 30 ft. above the ground, when it broke in two places but did not shift or slip out of line. The iron bands on the outside and the lining the full length made the chimney stiffer than is usual, for nearly all chimneys in falling exhibit a "whip action." The force of the impact drove the chimney blocks about 2½ feet into the ground and the mass was so disintegrated that only a few sections held together in circular form identified it as having been a chimney. Many of the bricks broke before the mortar gave way, the perforations in the brick acting as keyways for the mortar which formed a solid mass with the brick.

This method of felling chimneys is stated to have originated with the constructors named and the Tompkinsville chimney is but one of many that have been thus razed.

American Concrete Institute

THE program for the Annual Meeting of the American Concrete Institute to be held in Cleveland on February 13, 14, 15 and 16, 1922, will be spread over nine sessions, two sessions a day for three days and three sessions on the fourth day. These will be divided into two sessions for practical problems on the job; two sessions for concrete products manufacturers; one session on Roads; one session on Houses; one session on Research; two sessions on Engineering Design and Inspection. An active campaign is being made to increase membership. The address of the Secretary is 314 New Telegraph Building, Detroit, Mich.

Standard Sizes of American Brick

THE following sizes of brick were adopted as standard by the American Brick Manufacturers' Association in 1918. This will answer several requests lately received.

Common Brick	8 x 2¼	x 3¾	in.
Face Brick	8 x 2¼	x 3¾	in.
Paving Brick	3 x 4	x 8½	in.
Roman Brick	12 x 4	x 1½	in.
Norman Brick	12 x 4	x 2⅜	in.

Hendricks' Commercial Register

THE thirtieth annual edition (1922) of Hendricks' Commercial Register has made its appearance in a new form. The rapid increase in the industries listed made a bulky volume with the former 6 in. by 8 in. type-page. The new edition has a type page of 7 in. by 10 in. which allows of 25% more matter on each page. Instead, however, of this reducing the 2800 pages to 2100, sufficient additional material has been added to make the total number of pages in excess of 2300. The work is valuable to all men who buy and sell anything, and everything, used by architects, engineers, contractors, material men, factories, mines, railroads, etc., and is also valuable for preparing mailing lists. It is published by S. E. Hendricks Co., 70 Fifth Ave., New York.

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THE AMERICAN SPECIFICATION INSTITUTE

127 North Dearborn Street, Chicago

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The First Annual Conference
Report of Proceedings Continued From Previous Issue

Chairman Post: Gentlemen, we would like to have a short discussion of each subject after the matter is presented. We would like to spend fifteen or twenty minutes on this subject now and if any of you gentlemen have any questions to ask, Mr. Arnold will be glad to answer them.

Mr. F. E. Davidson: (President of The Illinois Society of Architects) I would like to ask Mr. Arnold this question: if the Barber Asphalt Company have made any series of investigations on the practicability of having the roofs of our buildings built absolutely level, without any pitch, and then building up a roof to take care of those conditions.

Mr. Arnold: There has been a good deal of thought given that subject. I hardly know just how to answer that question. I think that the thought originated with a competing concern and I rather dislike to get into an argument as to the relative merits of material under various conditions of that kind, and I would rather not at this time get into a discussion that would bring out or entail me into the argument as to the relative merits of the materials used in that kind of construction.

Mr. Davidson: You say that idea was started by one of your competitors. I think he started that at my suggestion. I made that suggestion to the Barrett Company about three years ago and asked them to investigate the possibility of building up a built-up roof that would be weatherproof on a flat surface. There are some reasons why a perfectly level roof is desirable, particularly in certain industrial plants. I think it has proven very satisfactory. We have had a number of buildings built that way and never had a leak. The argument in favor of it is this: the life of any roof is the life of the volatile oils in your flux, is it not? Now if you can have your roof almost level and there is moisture, the oils are not apt to evaporate quite so rapidly; that tends to make your roof last a little longer.

Another point I would like to mention here for the information of these specification writers is in regard to the uncoated roofs. Now I have had a very sad experience with the uncoated roof, without gravel on top. I made some investigations in the case of two buildings of exactly identical construction, one with the felt not covered with gravel, and the other, immediately adjacent, with the built-up roof with a heavy coating of gravel. I find that in the summer months the temperature of the upper story is very much lower under the built-up roof than it is under the uncoated roof.

Mr. Arnold: You mean they are built-up in either case.

Mr. Davidson: One is a Johns-Manville and the other a Barrett specification.

Mr. Arnold: Asbestos is known to be a very great conductor of heat units. That is a subject that is very interesting, too. There are a good many claims made for asbestos and some of those would stand a very careful investigation. In fact, I have suggested to our chief engineer and others of our organization that we have some tests made by disinterested laboratories along just such lines to determine from an unbiased standpoint just exactly what we could reasonably expect from these various materials.

Now speaking about that flat roof, do I understand you to mean, Mr. Davidson, that in your opinion we could expect a longer life from any materials used on a perfectly flat construction provided a waterseal is supplied? Is that your idea?

Mr. Davidson: I mean this: in our Chicago climate I would say under normal conditions there would probably be three months in a year when the surface immediately close to the roof is moist all the time, so your roof is actually under water twenty-five per cent. of the time. Now just in so much as you are covering that roof with a film of water, preventing the evaporation, you are increasing the life of that roof. That is the general theory.

Mr. Arnold: I would question very much whether moisture to that extent on a roof would preserve the life of any materials.

Mr. Davidson: I would like to add that the real reason for suggesting the flat roof is because in a great many of our industrial buildings today

a building is built two or three stories high and designed for future stories.

MR. ARNOLD: That is a thing I didn't want to get into.

MR. JUDD: (Engineer of Buildings, Illinois Central Railroad). It occurred to me that Mr. Arnold, in his talk, left out one important factor and that is the life factor. He put the reinforcing factor in there and left out the volatilizing or life factor. It seems to me an important factor that we should have something in that specification that would tend toward a long life. The Illinois Central has had some very sad experiences of disintegration of roofs under the rays of the sun and then, when they are disintegrated, they are blown off in the form of dust.

MR. ARNOLD: I have always contended that a roof should be purchased with the idea of getting waterproofing. If a roof isn't waterproof, it is nothing else and its life is dependent upon the quality and quantity of the material used. If I were buying a built-up roof tomorrow I would first ascertain the kind of waterproofing that would go in it and then I would get the most in pounds in that particular type of material for the money that I cared to spend.

MR. JUDD: The trouble with that is that the very materials that are waterproof are the ones that sometimes won't stand the sun.

MR. ARNOLD: Of course, when we are covering built-up roofing it is pretty generally understood that any one of those materials will withstand the sun. I don't say how long, and as I said before, the embarrassing part of it is I didn't want to get into discussion as to relative merits of materials available so much as to promote the thought that it was necessary to decide on one of those materials.

MR. DAVIDSON: May I suggest for the benefit of our friend of the Illinois Central that I have often thought that the life of our ordinary roof is dependent upon how much dust and dirt is blown on top of that roof after it has been laid.

I have had very unfortunate experiences with the uncoated roofs.

MR. JUDD: That is the kind I was talking about.

MR. BEGGS: I will say a few words to you concerning general specifications, mostly where they affect general estimating and the cost of the work. The general conditions are the first that come to an estimator's attention. I have found that most general conditions are entirely too ambiguous. They do not state definitely whether or not certain items are to be included. For example, the item of bond, which in itself is one and one-half per cent. of the entire cost of the work. Then there are such items as contingency insurance, various tests, fire insurance, certain allowances, etc. Quite often an estimator includes many of these items by inference, when it really is not the intention of the specification writer to have same included. Invariably contractors include in their estimate an item for contingencies. This is partially necessary because of the incompleteness or inaccuracies of the specifications, the contractor realizing that items will come up involving additional expense, which he must bear. These items sometimes become great hardships on the contractor; figures will be higher to some architects than others on this account. There are other uncertainties which the contractor has to contend with, which could be fully covered in specifications. For instance, in caisson construction, water bearing soil or other difficulties may be encountered which are covered by general clauses in the specifications in such a way as to hold the contractor liable, no matter what the additional expense, where as a matter of fact the owner should in all cases bear the additional expense of these unforeseen items.

Then there is the matter of writing specifications in such a manner so they will cover the different items that go into a building in their proper sequence; that is, start out with General Excavation—then follow with Trench Excavation, Concrete Foundations, Plain Concrete, Reinforced Concrete, Finished Cement Work—finish all concrete work and then go on with Brickwork and other masonry items. It often causes lo s of time and considerable confusion to the estimator, because of specifying, for instance, General Excavation, Trench Excavation, and then proceeding with the Brickwork, instead of following with Concrete Foundations, etc. In cases of this kind the estimator must follow a system of his own instead of being able to follow through with the specifications as should be the case. The idea I wish to make clear is that in taking off Trench Excavation quantities an estimator would naturally follow with Foundation Concrete, for the reason that they have to do with each other.

Many specifications are written in such a way as will necessarily add to the cost of building. For example, they require that concrete formwork be built certain ways and follow with considerable detail as to just how this should be done, the estimate being made up accordingly, whereas contractors using their own method of forming, which may be just as satisfactory, would in all probability be able to build same at much less cost. Strength and workmanship, of course, are essentially a specification requirement.

Unit prices are called for at times, the amount to be the same for either addition or deduction. This is not just, for the reason that at times it costs more to add than it does to deduct, and unit prices should be requested for addition and deduction separately: for example, wood piles, caissons, etc.

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The time for completion of the work should be specifically stated, which puts competing contractors on the same basis. For instance, in figuring work in the Fall of the year one contractor may figure on heating materials and enclosing and heating the building, and another may figure to shut down the work until Spring. It necessarily follows that the contractor figuring to carry the work through the Winter would have a much higher bid.

Another bad feature in specifications is the wording, "Must meet the approval of the architect or engineer." Just what does it mean sometimes? It is hard to tell. The specification should be definite as to what the architect or engineer will approve, and so clear that there can be no doubt as to what the contractor must include to cover the requirements. Specifications in this respect should not be so worded that the contractor may include something costing less money which he conscientiously believes will pass and then be compelled to furnish something costing substantially more.

Concerning the matter of sub-branches: The specification should be written so a contract can be drawn for the various main and sub-branches separately. One of the most aggravating and nasty problems encountered in making up a bid, especially on large contracts, is that of the specification which places a great many separate and distinct branches under one heading, such as Ornamental Iron, Miscellaneous Iron, Fire Escapes, Steel Sash and Glazing, or Roofing and Sheet Metal. It requires a great amount of study and sometimes it is almost impossible to get the right analysis because of the different sub-contractors including items in their bids in such a manner that proper comparison cannot be made. Sometimes when time is short it becomes necessary to use a bid including all the branches, knowing that same is not low.

At the present time when everyone is working to the end of reducing the cost of building construction it behooves us to consider our specifications more seriously as to costs, rather from the standpoint of practicability than that of theory. I have in mind a certain specification which concerns the pouring of concrete; namely, that of requiring slump tests, which clause reads as follows: "The consistency of concrete and mortar shall be determined from time to time by means of slump tests conducted by the engineer at the contractor's expense. These slump tests shall be made by ramming samples of the mixed concrete into a steel shell shaped as a frustrum of a cone 12 in. in diameter at the base, 6 in. at the top, and 12 in. high. The steel shell shall be removed after the concrete is placed and the resultant slump in height of the mass shall not exceed an amount to be determined by the Engineer from tests conducted at the site, and in no case shall the slump or drop in the height of the mass exceed 2 in., except for concrete to be used in thin sections, where the slump shall not exceed 4 in." We, of course, realize more each day the importance of the proper consistency of concrete, avoiding excess water, as it affects its strength, but such requirements as I here cite are not practicable from the contractor's and estimator's standpoint. In this particular case where 50,000 yards of concrete are involved it would mean an additional cost of possibly $100,000 or more. Furthermore if this specification were rigidly adhered to, the concrete would be of such a dry nature that it would be impossible to work it around the reinforcing steel and get satisfactory results, and the item of patching would be very costly.

Specifications should be a matter of fact and not a matter of opinion. The one constant thought to be kept in mind is fairness to all parties.

Some specifications include standard printed clauses which seem to be so intentionally worded that they can be construed in an architect's or engineer's opinion, which is usually final, to cover any emergency which might arise and are at times worked unjustly and unfairly against the contractor. A standard fair specification made as clear as possible so no questions can arise from the owner's, architect's, engineer's or contractor's viewpoint, conforming with a standard fair uniform contract would be an ideal arrangement.

WE will now continue the consideration of this subject from the viewpoint of the Contractor. Mr. Avery Brundage, Contractor, will now present his views on the Subject of Defects in Specifications from the Contractor's Standpoint in the Actual Construction of the Work.

MR. BRUNDAGE: Mr. Post and Gentlemen: Learning from the roll call that I am the only contractor here, with the exception of Mr. Beggs, and knowing, therefore, I am among friends, I feel free to discuss specifications without withholding any of my thoughts.

Considering that nowadays most buildings are conceived today and wanted next week, including the preparation of specifications, plans, estimates, organization and everything else, I hesitate to criticize any man's work in connection with the building industry. However, there are some few things that we may say about specifications. In the first place, the average specification that comes into a contractor's office is barely legible; it is made on a multigraph by the office boy or copied by a stenographer, about eight or ten copies at a time, and the contractor can barely read it. I think that is one phase that should be improved.

Also, some specification writers should be made more familiar with the English language than

they are and also the common methods of punctuation, because sometimes a period or a comma makes a great big difference in dollars and cents to the contractor and to the owner. There are various kinds of carelessness—punctuation, which I have just cited, omission of words, and also we encounter sometimes careless ideas. For instance, recently we had an alteration job in the sub-basement of one of the loop buildings in which the specifications called for all concrete to be mixed in a mixer operated by electricity. This job amounted to perhaps $10,000 or $15,000, and the cost of getting a mixer into that sub-basement might have been $25,000. Any contractor that figured he could mix that concrete by machinery would have missed the successful bid by about two hundred per cent.

The specification writer should perhaps know more about the building business than the architect, engineer or contractor. He has to cover all branches and provide the information for the contractor and do it for the ultimate good of the owner. Unfortunately, he oftentimes (the specification writer) doesn't know as much about some branches as he might.

One phase of this has already been referred to; that is, the arrangement of the specifications with respect to union rules and regulations and trade customs. This is rapidly being remedied by the actions of the National Board of Jurisdictional Awards, with which we are all more or less familiar nowadays.

The specification writer should know trade names and what they mean. Mr. Arnold has already referred to the necessity for that information in the specification.

The specification writer should know what can be done. If he did, in many instances he would not use the language he does nor the figures that he does. For instance, a standard specification for years has been that red lead paint shall contain thirty-three pounds of red lead to the gallon, which is a physical impossibility; you can't sustain thirty-three pounds of red lead in a gallon of linseed oil.

The specification writer should know and realize the effects of some of the practices and procedures that he specifies. He should not be too precise in his specifications, because he certainly cannot cover all the individual items in a building, particularly a large building, and if he attempts to be precise and is yet not complete, the contractor has the privilege of assuming that he is precise and neglecting to estimate the things that are not specifically mentioned.

Furthermore, in this same connection, a specification writer cannot hope to cover every possible contingency in his specification. I have in mind a case that occurred some years ago in which an owner wished to waterproof some balconies that projected over the sidewalk and that leaked during a rain or snow storm, on the pedestrians below. He contracted with a contractor to do this waterproofing, one who was not familiar with the uses of concrete as a waterproofer and not familiar with various other standard methods but familiar with the use of a low price, which seems to be the redeeming feature in many owners' and architects' minds.

At any rate, he put about three-quarters of an inch of concrete on the floor of these balconies without making any special effort and without protecting it from drying out too quickly, and it dried out and cracked and the balconies leaked as much or more than they did before they were waterproofed. The building owner refused to pay for this work and the contractor sued and unfortunately he secured the use of a more clever lawyer than did the building owner and that lawyer convinced the jury that the concrete did not leak, but the cracks did and he was, therefore, entitled to his money.

As well as not attempting to be too precise, while that is not as common a failing as the opposite of being too broad, the specification writer should not attempt to indicate or complete all of his specifications in one sentence, such as some that we have seen which state that the contractor shall include everything necessary to build the building, whether it is on the plans or specifications or not. That kind of a clause costs the owner a lot of money ordinarily, and it occupies a very prominent place in the contractor's estimate in the dollars and cents column.

A specification writer should be conversant with the adjectives contained in the English language and when he specifies that a ventilator should be sheet metal, he should state what kind of sheet metal, whether it is lead, copper, galvanized iron or plain iron and what gauge it should be.

He should also specify, and be precise, in the kind of equipment, although he should avoid the direct use of any particular manufacturer's product without the term "or equal." I have in mind a certain specification which called for a steam specification in a rather large job without the use of the term, "or equal." The first figures we got on this specification were $13,000. It was a small item in the heating equipment. It should have been a small item in the heating bid. When we, after some months' negotiation, got the consent of the owner and architect to use another device of the same nature and just as good and just as expensive, this man's bid was reduced to slightly over $3,000 for the same thing that he wanted $13,000 for when he thought that he had it sold.

Broad clauses, without relation to the plans, that appear in some specifications are very hard to figure, such as, "All exposed pipes and conduits shall be encased in wire lath and plaster." To figure such a clause accurately might take as long as it did to draw the plans for the building.

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In other words, a complete layout of the mechanical branches would have to be made. It is impossible for the contractor who has to figure a job in a few days to do that and the result most certainly makes for a great and wide variance in bids.

One thing the contractor objects to, which may not be the fault of the specification writer, is the request for a great many alternates in a bid. The specifications will call for a price on the use of a certain kind of marble and another kind of marble and Caen stone and sand plaster. As a contractor it is my impression that an architect should have sufficiently accurate information on prices or should consult with some reliable contractor that he has faith in and get that information before asking some eight or ten contractors to go to the expense of figuring in detail. We had recently to figure a job which was asked for four different ways, which meant that our estimate cost us in the neighborhood of a thousand dollars on that particular building. Fortunately we got the contract but some dozen other contractors did not and that goes into the contractor's overhead and makes the cost of doing business that much higher and consequently reacts against the owner in the long run.

The practice of specifying ornamentation rather than showing it, thus leaving it to the individual contractor to interpret just what is wanted, is a very evil one and it allows for a great deal of latitude in bidding. This is particularly true in plastering work and ornamental iron and cast work, and bids in these branches, which ordinarily vary enough, will vary two or three times as much as they should because the plans are not definite and it is attempted to cover in the specifications what should be shown on the plans.

Very often specification writers use standard clauses that do not apply to the job under consideration. Of course, this is the result of a lack of time perhaps, but the contractor feels that if he is compelled to read the specifications the specification writer certainly ought to be compelled to read them once, anyway.

The worst thing of all, I believe, in the way of specification errors is the attempt to cover methods instead of materials and quality of workmanship. As a contractor I don't believe it is the architect's business or within his province at all to dictate how we shall do our work. It destroys the contractor's initiative and compels the good contractor to fall to the level of the average or poor contractor. I have in mind a caisson job where the architect specified the use of three inch lagging in four foot lengths with extra heavy rings and drums all the way to bed-rock. It would have been far better to have stated that the contractor was responsible for all settlement and allowed him to figure out what was necessary in that particular location.

I ran across a clause the other day that I thought was a good one in this connection and that was, "The contractor shall be required to use proper care and diligence in bracing and securing all parts of the building against storm, wind and frost. He shall be his own judge of what is proper and if it doesn't attain the end of protecting the building, he shall be responsible." That places the responsibility with the contractor but does not attempt to dictate to him how he shall do it. I have seen specifications, for instance, for backfilling, which specified that dirt shall be thrown in in six inch layers, wet and tamped and followed by another six inch layer, so as to avoid settlement. If the contractor follows that procedure and settlement results, I hold that he is not responsible for that settlement.

Of course, there are lots of things done backwards in the building business. One of them is the attempt to secure the best contractors on the lowest bids. Another is an attempt to bond all contractors when as a matter of fact the owner should be the one that is bonded. The contractor puts his money into the building and takes all the chances and usually has to wait six or eight months for a final settlement and then sometimes doesn't know whether he is going to get it, and the proportion of times when the bond should be carried by the owner far outnumbers that when it should be carried by the contractor.

As a contractor, I am very glad to see an institution like this body organized and studying the subject. The building industry is a business that never has been and probably never will be thoroughly organized in any branch. One of the hopes of this last generation is the fact that there are more and more organizations, such as the Associated General Contractors of America, studying the aspects of the business with an attempt to improve standard conditions, and The American Specification Institute should fill a great void in this industry.

Of course, specification writers are being helped by the national associations of material dealers such as the Portland Cement Association, the Metal Lath Industry and the Face Brick Association in developing standards and cutting out duplications and making for better building at less cost.

MR. DAVIDSON: Mr. Brundage suggested putting in the term "or equal." I would like to know what the general reaction of that point is.

CHAIRMAN POST: Is your question a question of whether you should specify trade names or if you specify trade names, should "or equal" be put in?

MR. DAVIDSON: Yes. Now the way I do it in my own practice, Mr. Chairman, If I have a specialty that I want to use, that I know is satisfactory, and will do the work, I will name that specialty, but I will also name at least two other

specialties which will give comparatively the same service, then I will say "or equal." Then when I come to closing up with the contractor, I will say, "Which are you going to use?" I have never had a contractor refuse to give me what I wanted, because he has had his competition.

I don't believe in the blanket proposition of naming one specialty only and "or equal," that is, without any qualification clause. If you name two or three articles, any one of which will give you service, that will give your contractor an opportunity of securing competition, and will obviate the securing of this manifestly unbalanced bid that Mr. Brundage refers to from $13,000 to $3,000, and then when you actually close up you can always get what you want at the same price.

Mr. Arnold: May I say a word here? Mr. Davidson has exactly my idea in that respect, and the point I wanted to make when I proposed or suggested the idea of classification in our materials, and I don't think that the condition differs in other branches of the building industry, was that rather than specify we will say three, in the case of built-up roofs, all entirely different in character, that we decide first of all what particular type of material we want to use, then let anybody that may have those materials to supply bid on the work and eliminate all this guesswork. Why I have seen specifications in the case of roofing where a man might as well write, "Put a roof on the building," because the specification covered everything under the sun.

Secretary Coughlen: I want to say that I have had a letter from one of our members asking that same question and he apparently thought that we could give him the answer. He suggested that he has used two schemes both of which he found successful. One was that the specification shall be of such and such a type, definitely naming a certain specialty. The other one is to name three or four specialties and ask for separate figures on each one of those and give the contractor the opportunity of submitting figures on any similar specialty that he wanted to submit.

Mr. Davidson: I would also like to ask for the general reaction of the members here as to Mr. Brundage's suggestion that the average specification writer should be familiar enough with his work so as to keep out of his specification a requirement for so many alternative bids. A specification writer who follows that practice doesn't know his job, he has no business being a specification writer.

Mr. Woodyatt, (specification writer for D. H. Burnham & Co.): It may be the owner doesn't know which thing he wants, perhaps he would like to have a choice.

Mr. Davidson: My answer to that question would be this: If the owner hasn't enough confidence in his specification writer he had better get another one that he does have confidence in, because the specification writer, or architect, can tell the contractor the cost in these different items; he can tell him near enough so that the owner can make up his mind which he is going to use and then write his specification accordingly.

I would also like to say that I know Mr. Brundage's statement is absolutely correct when he says that if a specification definitely specifies a method for doing work and the contractor follows that, that he is relieved from any responsibility as to the success of that operation. That is a legal proposition that every specification writer ought to realize.

Disease In Cathedral Glass

THE following item has once more started the rounds as a "filler" in the popular press. At least three years ago scientific men conversant with the facts published the truth but not all editors who clipped the item about the "mysterious disease" have read the denials.

Windows Ruined By Disease

York minster one of the most beautiful cathedrals of England, famous for its glorious stained glass, is in trouble. Some mysterious disease has attacked the stained glass. It takes the form of minute holes which in time deepen and cause the glass to flake. Some portions are as thin as tissue paper and crumble at the touch. No one knows a cure.

The disease is merely chemical deterioration. Some of the glass was made at the time when lime was used as a cheap substitute for soda and potash before it was known to be a valuable constituent, second only to silica. Some of the glass was made with inferior potash, some of it contained too much iron and some of it contained too much sand. Temperatures controlled today by pyrometers and thermometers were controlled a few centuries ago by the judgment of foremen trained in the school of experience.

Materials were not proportioned with scientific nicety and accuracy. A change of foremen in the factory supplying glass to York minster would change the quality of the material for a time. Even the best glass is slightly acted upon by alkaline solutions, by light, air and boiling water. That the glass supplied to York minster lasted without deterioration for several centuries, speaks well for the state of the art at that period. The cure is hermetically to seal the disintegrating panes between two thin sheets of good glass. Unfortunately but a small number of panes can be thus treated.

Chaloner Foundation Art Prize Awarded

THE John Armstrong Chaloner Paris Prize Foundation recently awarded the first prize of $25 to Charles Costa while W. Stuart Leech and Louis J. Lucioni won second and third prizes of $15 and $10, respectively. H. Carlyle Leech and Alexander Geiss won first and second honorable mention. All are students of the National Academy of Design.

George de Forest Brush, W. L. Metcalf, Herbert Adams and Charles A. Platt comprised the jury.

French Architects Plan to Build Under Elevated Railways

FRENCH architects have recently submitted to the Municipal Council of Paris a plan for relief of the housing problem which the newspapers claim "has more ingenuity than sentiment." It is proposed to fill in the spaces under the elevated railways with rows of houses. This has been successfully tried at Vincennes.

Projected design for a bank and office building in San Francisco, California

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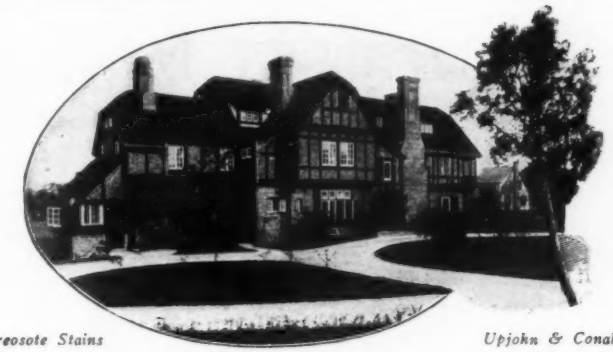

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CHARACTER

THE year just closed has been one marked by the wholesome conclusion of movements started years ago; movements the progress of which was at times so slow that the hearts of some men grew sick.

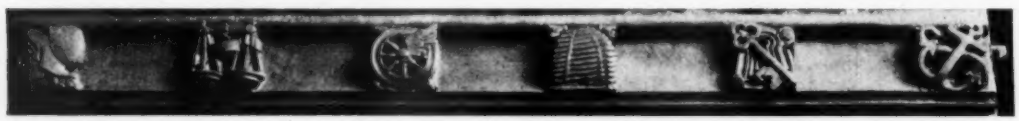
An outstanding event was the Landis award in the Chicago building industries arbitration. The refusal of banks to loan money to contractors who refused to abide by the decision looms larger than the award; the organization of a city-wide movement of citizens to see that the award is lived up to is indicative of a highly satisfactory condition of the public conscience. The man on the street has learned the meaning of ethics.

The building industries in New York City have adopted a code of ethics and quality is to be stressed. A contract is to be a contract animated by the spirit of service. Owners, architects, contractors and building artizans are to co-operate; perhaps not today, nor the immediate morrow, but soon. The leaven is working. A long step forward was taken when this code of ethics was adopted and given to the press.

A curious phenomena noted in connection with business cycles is that when revival begins a spirit of exaltation, a resolve to improve the conduct of business is manifest. It has been termed "The Period of Religious Revival" and now that improvement is manifest all along the line, we find men are not afraid to speak among themselves of ethical conduct. The Portland Cement Association at its annual meeting a month ago amended the constitution and by-laws so as to make membership in the Association "Contingent upon member's product meeting the standard specifications for Portland Cement adopted by the United States Government and the American Society for Testing Materials." Added evidence of a new era in business.

It has been observed during the trying times following the war that character is the great touchstone. It is not what men do in a large way, but it is their actions in times of adversity which reveal their character. The downward curve on the graph of the business cycle is a wholesome thing because it goes down to the foundation on which sound business is built and when it starts upward, the air is purer. It is as though character, like the giant Antaeus, needs the strengthening contact with the earth to begin again a vigorous conflict with the evils always attendant upon prosperity.

In common with the general advance of business along ethical lines the standing of industrial journals has become more secure. Readers have confidence in their favorite journals such as they never had before and look to them more and more for service in addition to that given in the printed pages. It is gratifying to note the increasing number of inquiries received by this journal, many of them from prominent architects, asking information as to how solemnly certain business institutions regard their obligations. The architect may be familiar with the manufacturer's printed matter, can tell about the material and possibly has listened attentively to all the local representative can tell him. He lacks, however, knowledge of the general business policies of the institution and this he feels the publisher of his favorite paper can supply, for whatever dealings the publisher may have had were with headquarters. So the architect writes a letter, or sends a telegram, as he would to a close friend, confident that he will receive wise counsel. His question is always as to the character of the manufacturer or dealer, his regard for solemn obligations entered into and whether he considers without the mandate of law, that the act of a representative or the head of a department is binding on the company. This is an unlooked-for development in the publishing business. It has opened an opportunity for service not previously realized. This service is always given and in most instances is valuable to the subscriber. It is also of value to the manufacturer in the great majority of cases, for the great majority of them do not regard lightly any obligation undertaken, whether entered into by the production, advertising or sales department. They are sound all the way through.



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The heavy butt, the taper and the beveled edges give an artistic shadow-line.

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The power is locked while the enclosure gate is open and the power is KEPT LOCKED until the gate is securely closed.

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All this is done quickly and automatically without attaching to the motive power of the elevator. The service is not slowed up. Increased operating efficiency results on all M-C-K equipped elevators.

ARCHITECTS: Write for descriptive literature and specifications. We will send list of famous buildings that are M-C-K equipped.

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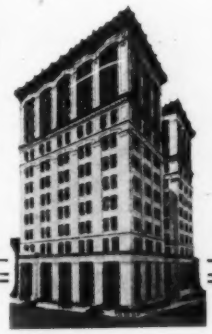


- another M-C-K equipped building
Mutual Assurance Co. Building, Richmond, Va.

Correspondence

Mr. Irving K. Pond, While Always Mindful of His P's and Q's, Acknowledges Some Carelessness in the Matter of His T's

IN the following communication received from Mr. Irving K. Pond, he very generously assumes all the responsibility for the error to which he refers. It seems, however, while Mr. Pond may be in a measure culpable, it is only just to state that had the proofreading of his article been more accurately done, the error would have been discovered. Therefore, it seems that the Editor should assume some measure of responsibility for the unfortunate distortion of Mr. Lutyens' name. —Editor.

Editor, THE AMERICAN ARCHITECT,
Sir:

I owe Mr. E. L. Lutyens, and Mr. Charles Moore and his public, and your public an abject apology, the which I am asking you to convey to them through the medium of your valued journal. In my review of Mr. Moore's excellent work covering the life and activities of the late Daniel H. Burnham, appearing in your issue of December 7, I essayed to correct a typographical error which affected the spelling of Mr. Lutyens' name, and I made the matter worse by forcing (inadvertently I must say) upon my esteemed friend, the noted English architect, an extra "t," a mild little lower case "t," which however, had a bit of a "kick" in for me, as I realized when I saw it in print, beyond recall. Please let this convey to Mr. Lutyens, and to Mr. Moore, and to the public, my deep chagrin that through an inadvertency involving the name, work, and intended enlightenment of the respective parties, I should have exposed myself to the possibility of a humorously emetical reaction.

IRVING K. POND.

Union Scales of Wages and Hours of Labor in Ohio

THE Department of Industrial Relations for the state of Ohio has recently issued a report on "Union Scales of Wages and Hours of Labor in Ohio on May 15, 1921." That section devoted to the building trades will be of great interest to those who are studying the wage question in the construction industry. The Department is located in Columbus, Ohio, and Mr. Percy Tetlow is the director.

Dallas Architectural Club to hold Exhibition

THE Dallas Architectural Club will hold its first annual exhibition of Texas work, in the Jefferson Hotel at Dallas, February 11 to 18.

While this organization is one of the youngest of the chain of architectural clubs all over the United States, it has from the time of its organization been very actively concerned with the architectural development of Texas. This exhibition will undoubtedly be one of considerable interest and demonstrate what a wide awake organization may accomplish by well directed effort.

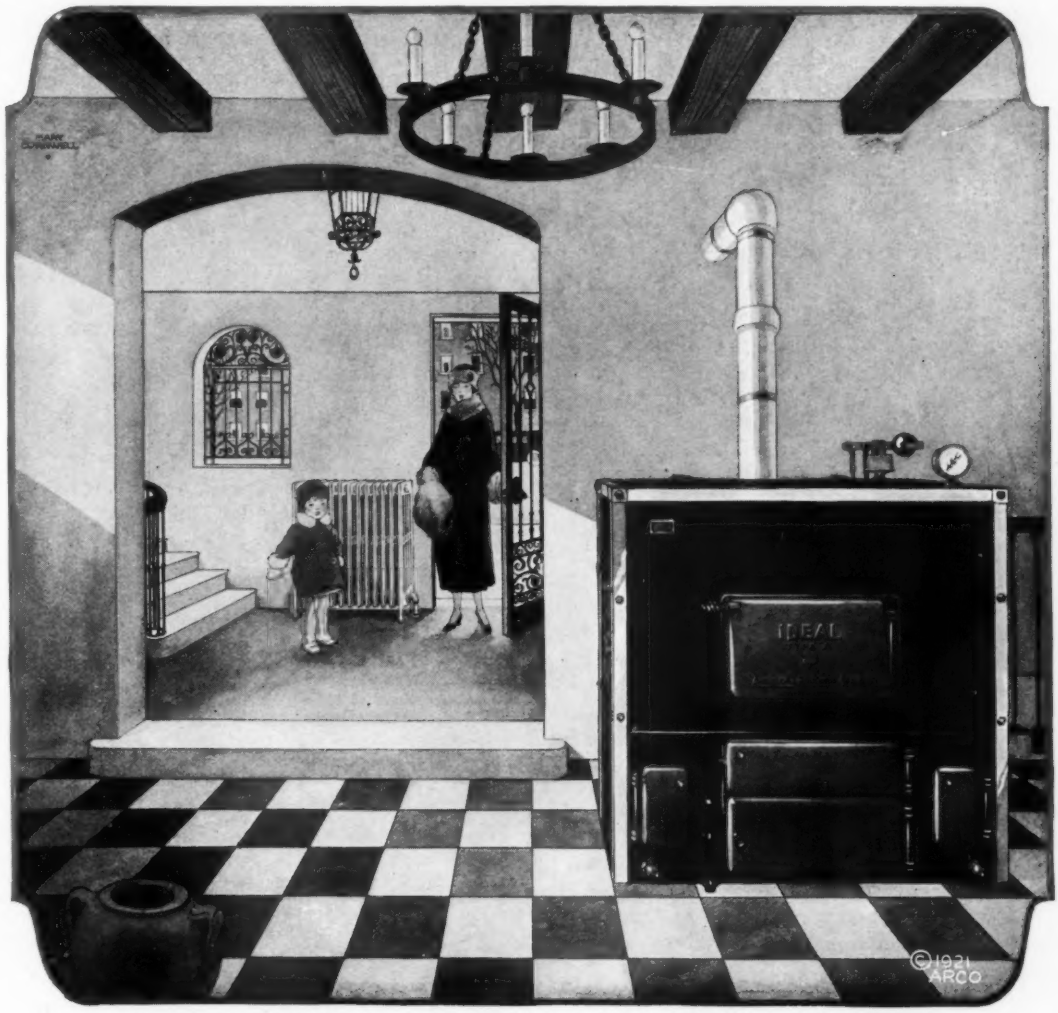
Annual Meeting, New York Chapter, American Society of Landscape Architects

THE annual meeting of the New York Chapter, American Society of Landscape Architects, was held at the City Club, Tuesday evening, December 13, 1921. The following officers were elected for the term of two years: Harold A. Caparn, President; A. F. Brinckerhoff, Vice-President; Richard Schermerhorn, Jr., Secretary-Treasurer; Charles N. Lowrie, Member of Executive Committee.

The Secretary's report showed a substantial increase in membership of the Chapter during the past two years, which was more than for any other term since the Chapter's organization.

The report also emphasized the particular interest of the Chapter during the past year, which has concerned itself with the improvement of the New York City Park system, which has reached the lowest degree of efficiency experienced during its existence. The N. Y. Chapter, A. S. L. A., in seeking a remedy for this situation, has decided that the remedy would lie in the adoption of a City Charter amendment providing a more logical scheme of park administration. The N. Y. Chapter has recently circulated a printed pamphlet presenting their views on the subject and requesting co-operation toward securing the passing of such an amendment. This circular has met with great success and many have pledged their aid. Copies may be obtained from the Secretary, Richard Schermerhorn, Jr., 363 Lexington Avenue, New York City.

The speaker of the evening was Mr. W. B. Van Ingen, landscape painter, who has interested himself to a large degree in municipal parks and who recently made a careful study of the parks of Chicago. His praise of the Chicago South Park System was elaborate. These parks are maintained in most excellent condition, contrasting to a very great degree with the New York City parks. The original plans and reports of Messrs. Olmsted & Vaux, who designed the Chicago park system, are faithfully adhered to, not only in form, but with a spirit of great intelligence. These men did not work in any feeling of conventionalized park design, but receiving their inspiration from the prairie landscape, were able to reproduce the spirit of the prairie in their composition. This spirit is understood and faithfully adhered to by the administration. The topography of the Chicago parks thus differs greatly from that of New York and the land is nearly level, the areas developed in the form of plains rather than hills and dales. But the treatment is so that the maximum of picturesque vista and harmonious composition is realized. The climate of Chicago differing from that of New York also, there is not



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the same range in plant growth as in New York, the trees in use being limited principally to those of the soft woods, such as willows, poplars, etc., which grow more favorably in that climate than they do here. The people of Chicago are more interested in their parks than the people of New York.

New York Society of Architects

FIFTY members of the New York Society of Architects and their guests, took part in the December monthly meeting which was held at Hotel Astor in this city.

It is usual at the monthly meetings of the Society, to have some well-known representative of a particular branch of the Building Industry to give a talk of his own special line of work. These addresses are not only highly interesting but of a distinct educational value to Architects. On the present occasion an address was given by Mr. Charles Lehman, President of the Dictograph Products Corp., explaining at length the development and manifold application in buildings of various kinds and otherwise of the dictograph.

At the regular business meeting following, Vice-President Loth of Troy, commented on the failure of the Legislature at its last session to pass the Architects' Registration Bill, and gave assurance that an effort would be made at the next session to pass the Bill. There is hope of success.

Henry B. Hertz, on being called upon, took occasion to emphasize the evils resulting from the present system of conducting Architectural competition, which he characterized as unparalleled and almost incredible. Fully substantiating his view of the matter by facts within his own experience and observation, Mr. Hertz closed by moving a resolution that a committee of three be appointed to draft a brochure on competitions, setting forth the unfairness to the Architect of the present system and giving general information to the public and to associations and private individuals who desire to secure the services of competent architects, especially for the construction of memorials and public buildings. After extended discussion this resolution was passed.

Vice-President A. Fischer, called attention to the chaotic and backward condition in the Building Departments of some of the Boroughs in the matter of issuing permits; and on his resolution it was decided that a committee be appointed to call at the Building Department of the various Boroughs to ascertain under what methods these Departments are working in filing of plans and applications, examining same, and granting permits, with a view to establishing a uniform system and thereby avoiding much unnecessary labor and at the same time helping the department in furnishing permits. The bill of Supt. Kleinert providing for the licensing of Superintendents of Construction met with the approval of the meeting, and was referred to the committee on Legislation.

Convention of the American Concrete Institute

THE annual convention of the American Concrete Institute will this year be held in Cleveland, February 13-16, 1922, both inclusive. The technical activities of the Institute will be thoroughly reviewed, and a program has been outlined that will cover the discussion of many important features confronting the concrete industry in this country.

Building In 1922

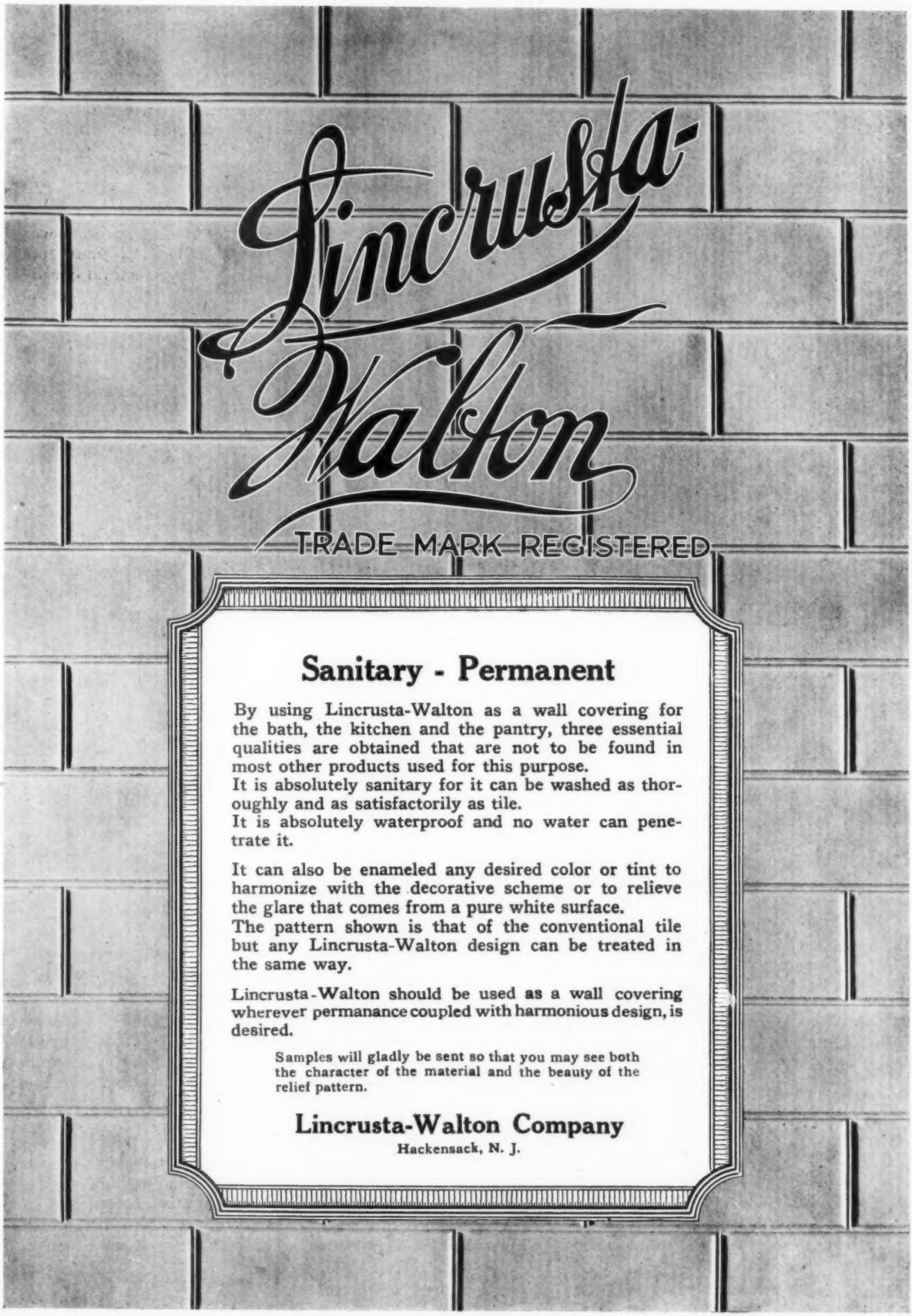
A New Record In Building should be established in 1922 states the *Engineering News-Record* in a recent issue. It will be established if construction interests in each city get together, cut out passing the buck, get prices down to where they are fair and reasonable and then make a united drive through the local press to educate the public concerning the real facts and convince the public of the safety in the building field.

If prices are not right, if some one interest is holding an ace up its sleeve, if contractors are trying to beat down labor without reducing service charges to the builder, if labor is trying to keep up wages regardless of the value of the service exchanged for wages, a publicity campaign urging "Build Now" is money thrown away. In most localities conditions are favorable to many kinds of construction work and in these localities the construction industry, acting along the line of the construction program recommended by the National Conference on Unemployment, can get results through a united advertising and publicity drive in local newspapers.

Building Shows Increase

NEW construction throughout the country in the first ten months of this year nearly equals construction for the whole of last year, according to a survey by the Chamber of Commerce of the United States. The Chamber's conclusions are based on figures from forty-four important cities reporting $603,000,000 in new construction. For the year 1920, the total reported by the same cities was only a little more.

The estimated cost of all construction in the forty-four cities in the ten months was placed by the Chamber at $722,000,000, divided as follows: Residential, $349,000,000; non-residential, $254,000,000, and alterations and special construction, $119,000,000.



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PERSONALS

Anderson & Tingle, architects, have moved their offices in Evansville, Ind., to 108 Upper Fourth Street, that city.

Henry A. Kulas, architect, is now practicing his profession in offices at Sixth and Lincoln Avenue, Milwaukee, Wis.

Wyckoff & White, architects, of Salinas, Cal., have opened an office in the Growers Bank Building, San Jose, that state.

Rollin C. Chapin, architect, has removed his office from 55 South 8th Street to 1624 Harmon Place, Minneapolis, Minn.

Leonard S. Henry, architect, wishes to announce the removal of his office to 36 East Forty-ninth Street, New York City.

A. H. McCulloh, architect, has moved his architectural office from Walnut Park to 1131 Northwestern Avenue, Los Angeles, Cal.

E. A. Winther, architect, has opened offices in Sheboygan, Wis., and will be associated with Edward A. Juul, architect and engineer.

Jones & Roessle, architects, have removed their architectural office from 1025 Maison Blanche Building to Suite 817 Maison Blanche Building, New Orleans, La.

Announcement is made that W. L. Woolette, architect, has moved his office from 215 Wright-Callender Building to 1211 Pacific Mutual Building, Los Angeles, Cal.

Birch Burdette Long announces that he has removed his architectural studio from 400 West Twenty-third Street to 36 East Forty-ninth Street, New York City.

W. Asa Hudson, architect, who has been practicing architecture at Santa Monica, Cal., with offices at 1105 Sixth Street, has opened a branch office at Beverly Drive and Burton Way, Beverly Hills, that state.

Edwin S. Coy and Ralph M. Rice are pleased to announce the establishment of a partnership for the general practice of architecture under the firm name of Coy & Rice, at 297 Madison Avenue, New York City.

H. I. Feldman, architect, announces the opening of his new offices for the professional practice of architecture at 17 West Forty-second Street, New York City. Manufacturers are requested to send catalogs and samples.

Boyd, Abel & Gugert, architects, have removed their offices to the Otis Building, 112 South 16th Street, Philadelphia, Pa. The Structural Service Bureau with which the foregoing and associates are connected, has also removed to the same address.

It is announced that Edw. L. Taylor, architect, of Edwin Bergstrom's office, Citizens National Bank Building, Los Angeles, Cal., has been granted a certificate to practice architecture by the California State Board of Architecture, Southern Division.

LaBrode & Bullard, architects, announce their removal to the new Olympia Building, 888 Purchase Street, New Bedford, Mass., where they will be associated, as in the past, with Fred W. Greene, Jr., Real Estate, in the suite of offices numbered 501 and 502.

Isaac Menline, engineer of design and construction for the Garment Center Capitol Buildings, New York City, and for several years prior thereto assistant engineer in the Bureau of Buildings, Manhattan, wishes to announce that he has opened an office for the practice of engineering at 112 West Forty-second Street, New York City.

Frank A. Azzarello and Julius S. Klein, architects, announce their association for the practice of architecture, under the firm name of Azzarello & Klein. Offices have been established in the Haltnorth Building, 2573 East Fifty-fifth Street, Cleveland, Ohio, where they are desirous of receiving manufacturers' samples and catalogs.

William J. Dilthey has recently moved his office from 1 Union Square West to 120 Liberty Street, New York City. He has built up a general practice in all classes of buildings among the best in New York City. As treasurer of the Brooklyn Chapter of The American Institute of Architects and secretary of the Department of Architecture of the Brooklyn Institute of Arts and Sciences, and a delegate to The American Institute of Fine Arts, Mr. Dilthey is inviting the co-operation, in this reconstruction period, for the furtherance of architecture along various lines of endeavor.

XUM

CHOIR, CHURCH OF S. VITALE—RAVENNA, ITALY